California Department of Forestry and Fire Protection

Lassen Modoc Unit
2004
Fire Management Plan

Signature Page

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PREFIRE MANAGEMENT PLAN 2004

Lassen-Modoc Unit

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Lassen-Modoc Unit

Executive Summary

The Lassen – Modoc Unit includes Lassen and Modoc Counties and portions of Plumas, Shasta and Siskiyou Counties. The Unit's Fire Management Plan is intended to provide information to CDF personnel, the County Board of Supervisors, Fire Safe Councils and other stakeholders focused on solving the mutually agreed upon fire situation in problem areas.

The Lassen Modoc Unit Fire Management Plan documents the assessment of the fire situation in the unit. It includes stakeholder contributions and priorities, and identifies strategic targets for proactive approaches and project based solutions which are defined by the people who live and work with the local fire problem. While the Unit Fire Management Plan should address local needs, the State Board of Forestry and Fire Protection also has legislative mandates going back to 1945 requiring it to determine the "intensity" or appropriate level of fire protection for all state responsibility areas in California *(Public Resources Code §4130).* The Unit Fire Management Plan is the Board of Forestry's way of making the California Fire Plan the unit's plan rather than "Sacramento's" plan.

It is intended to be an evolving document which can be used to provide guidelines for projects, identify potential hazardous areas or communities where the level of service might be lacking and to assist Fire Safe Councils and community groups with useful information in making their communities fire safe. This document should be used as a foundation that can be added to over the years and as a general guide for fire prevention projects within the Lassen – Modoc Unit.

The *California Fire Plan (1996)* is outlined within this document in the first section. It is the goal of this Unit to use the plan to accomplish a systematic assessment to develop "fire safe" communities and reduce the potential occurrence of devastating wildfires. In the efforts to implement the California Fire Plan, the Lassen – Modoc Unit utilizes computer based data and Geographic Information System (GIS) to comprehensively analyze fire hazards, assets at risk and the level of service, all of which are included in the Unit Fire Management Plan.

The Unit Fire Management Plan systematically assesses the existing levels of wildland protection services, identifies high-risk and high value areas that are potential locations for costly and damaging wildfires, ranks the areas in terms of priority needs, and prescribes what can be done to reduce future costs and losses. The assessment system has four basic components, which are discussed in greater detail later in this document. These components are:

Level of Service (LOS)
Assets at Risk (AAR)
Hazardous Forest Fuels
Historic Fire Weather

Unit Fire Plan Assessment Process

The Lassen – Modoc Unit Pre Fire Management Program has been in place since 1997. During the past seven years data has been validated and processed in order to assess vegetative fuels, assets at risk, fire weather, and level of service calculations. The assessments now include changes in the dynamics of the actual on-the-ground work accomplished. This development of the process is on going.

The development of a method for incorporating the current and past Timber Harvest Plans, Emergency Notices, Exemptions, and Non-Industrial Timber Management Plans into a GIS format is under way. The data to be collected and utilized will include the locations and types of fuels treatments in areas containing assets having the greatest value. This information can be utilized in many aspects by the unit and cooperating agencies.

Unit Fire Plan Data Layers

The Unit Fire Plan Data layer, which consists of, fuels, weather, fire history, emergency activity reporting system (EARS), assets at risk and level of service have been completed to date, but again these are fluid and dynamic in nature and must be re-validated on a regular basis.

Unit Fire Plan Integration into Daily Operations

Over the years, many of our managers and supervisors have had priorities and goals to reduce fuels around many of the communities within the Unit. The development of the Unit Fire Plan was based on the strong support and assistance from the Fire Safe Councils. Many of the ideas from these collective influences are now coming to fruition.

Additionally, in the past couple of years, Lassen Modoc Unit has initiated several successful Amador contracts with local Fire Protection Districts in Janesville, Standish-Litchfield, Westwood and Stones-Bengard. As time goes on it will be interesting to see what other items which have been identified within the Fire Plan come into actuality.

Key Fire Plan Players

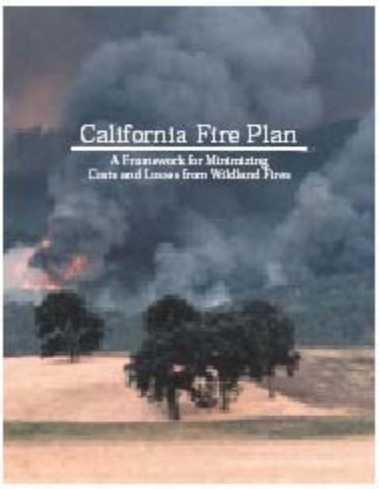
The Pre Fire Engineer position within the unit is instrumental in working with the Fire Safe Councils and Unit personnel in the development and implementation of many of the current and proposed projects within Lassen Modoc Unit. The Battalion Chiefs, Foresters, and Station personnel also work closely with the councils to assist in grant writing, administration and preparation of the required paperwork and project monitoring.

In closing, the intent of the Lassen Modoc Unit Fire Management Plan is to document the findings of the assessments, identify and document fuels management goals and communicate priorities toward solving a mutually agreed upon fire problem within the Unit. This Fire Management Plan looks at data from over a ten year span (1993 to 2003) to analyze what took place during 2003. Our fire activity for 2003 was below average for what normally occurs.

This Unit Fire Management Plan will be especially helpful to our Fire Safe Councils in supporting their future requests for grant funding and in providing a basis for many of their ongoing and proposed projects and providing the justification needed for these projects. It is the intent of this document to provide a simple, easy to understand report that will be used and will remain as a dynamic document guided by local community needs.

Don Posten
Lassen- Modoc
Unit Chief

THE CALIFORNIA FIRE PLAN (1996)



The *California Fire Plan* (1996) was drafted by the State Board of Forestry (BOF) and the California Department of Forestry and Fire Protection (CDF). This document is a comprehensive fire plan for the wildland fire protection in California. The fire plan consists of a planning process which considers: level of service measurements, assets at risk assessments, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis.

Goals and Objectives

The overall goal of the *California Fire Plan* is to reduce the total losses and ever increasing costs from wildland fires in California by protecting the assets at risk through focused prefire management prescriptions and improving the potential of initial attack success.

The *California Fire Plan* has five strategic objectives:

- To create wildfire protection zones that reduces the risks to citizens and firefighters.
- To assess all wildlands, not just the state responsibility areas. Analyses will include all wildland fire service providers – federal, state, local government and private. The analysis will identify high risk, high value areas, and develop information on and determine who is responsible, who is responding, and who is paying for wildland fire emergencies.
- To identify and analyze key policy issues and develop recommendations for changes in public policy. Analysis will include alternatives to reduce total cost and losses by increasing the fire protection system effectiveness.
- To have a strong fiscal policy focus and monitor the wildland fire protection system in fiscal terms. This will include all public and private expenditures and economic losses.
- To translate the analyses into public policy.

Fire Plan Framework

Five major components will form the basis of an ongoing fire planning process to monitor and assess California's wildland fire environment.

WILDFIRE PROTECTION ZONES A key product of this Fire Plan is the development of wildfire safety zones to reduce citizen and firefighter risk from future large wildfires.

INITIAL ATTACK SUCCESS The fire plan defines an assessment protection system for wildland fire. This measure can be used to assess the department's ability to provide an equal level of protection to lands of similar type, as required by Public Resources Code 4130. This measurement is the percentage of fires that are successfully controlled before unacceptable costs are incurred. Knowledge of the level of service will help define the risk to wildfire damage faced by public and private assets in the wildlands.

ASSETS PROTECTED The plan will establish a methodology for defining assets protected and their degree of risk from wildfire. The assets addressed in the plan are citizen and firefighter safety, watersheds and water, timber, wildlife and habitat (including rare and endangered species), unique areas (scenic, cultural, and historic), recreation, range, structures, and air quality. Stakeholders-national, state, local, and private agencies, interest groups, etc., will be identified for each asset at risk. The assessment will define the areas where assets are at risk from wildfire, enabling fire service managers and stakeholders to set priorities for prefire management project work.

PREFIRE MANAGEMENT This aspect focuses on system analysis methods that assess alternatives to protect assets from unacceptable risk of wildland fire damage. Projects include a combination of fuels reduction, ignition management, fire-safe engineering activities, and forest health to protect public and private assets. The priority for projects will be based on asset owners and other stakeholders' input and support. Prefire management prescriptions designed to protect these assets will also identify who benefits and who should share in the project cost.

FISCAL FRAMEWORK The Board of Forestry (BOF) and CDF are developing a fiscal framework for assessing and monitoring annual and long-term changes in California's wildland fire protection systems. State, local and federal wildland fire protection agencies, along with the private sector, have evolved into an interdependent system of prefire management and suppression forces. As a result, changes to budgeted levels of service to any of the entities directly affect the others and the services delivered to the public. Monitoring system changes through this fiscal framework will allow the BOF and CDF to address public policy issues that maximize the efficiency of local, state, and federal firefighting resources.

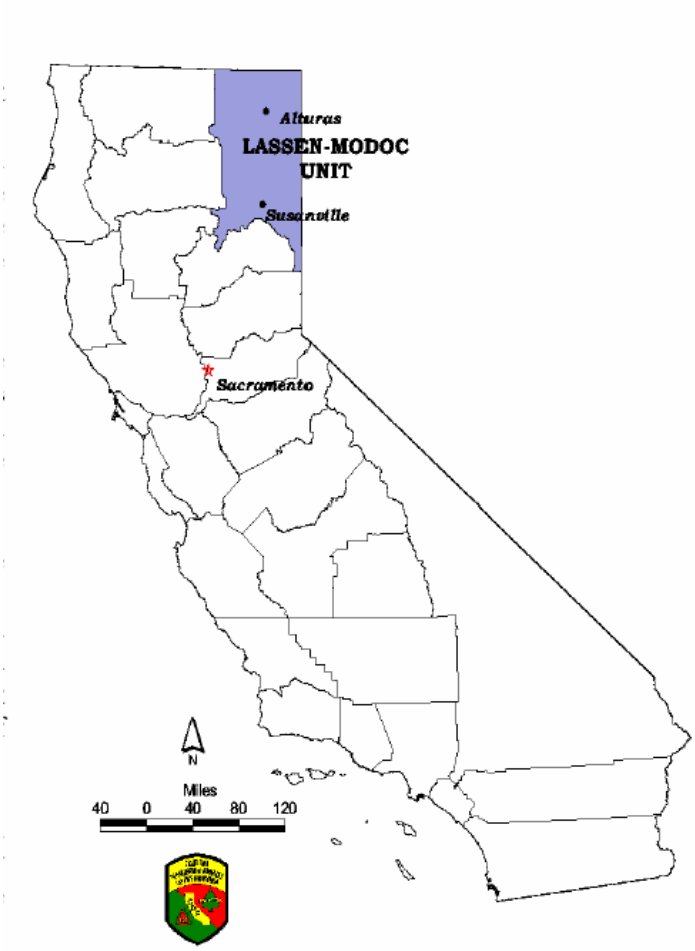
Fire Plan Framework Applications

- Identify for state, federal, and local officials and for the public those areas of concentrated assets and high risk.
- Allow CDF to create a more efficient fire protection system focused on meaningful solutions for identified problem areas.
- Give citizens an opportunity to identify public and private assets to design and carry out projects to protect those assets.
- Identify, before fires start, where cost-effective prefire management investments can be made to reduce taxpayer cost and citizen losses from wildfire.

- Encourage an integrated intergovernmental approach to reducing cost and losses. Enable policy makers and the public to focus on what can be done to reduce future cost and losses from wildfire.

Lassen Modoc Unit Description

Lassen-Modoc Unit is located in the northeastern corner of the State. It consists of Lassen, Modoc, and portions of Plumas, Shasta, and Siskiyou Counties. A total of 1.6 million acres are within the Direct Protection Area of the Unit.



The Cascade mountain range ends near the Almanor Basin. The Sierra Nevada range begins and runs to the south along the Diamond Mountains on the southwest edge of the Honey Lake Valley. The unit encompasses the Northeastern Plateau of California with an average elevation is 5000'.

Vegetation ranges from mixed firs and ponderosa and lodgepole pines along the west side of the Unit, to sage brush, oaks, and annual grasses mixed with juniper in the desert to the east. The eastern boundary of the Unit is the beginning of the Great Basin which continues east to the Great Salt Lake of Utah.

The majority of populated areas are located in the Honey Lake Valley, Almanor Basin, Big Valley and Alturas. The Honey Lake Valley is home to the City of Susanville, and communities of Janesville, Standish, Litchfield, Wendel, Milford, Herlong, and Doyle.

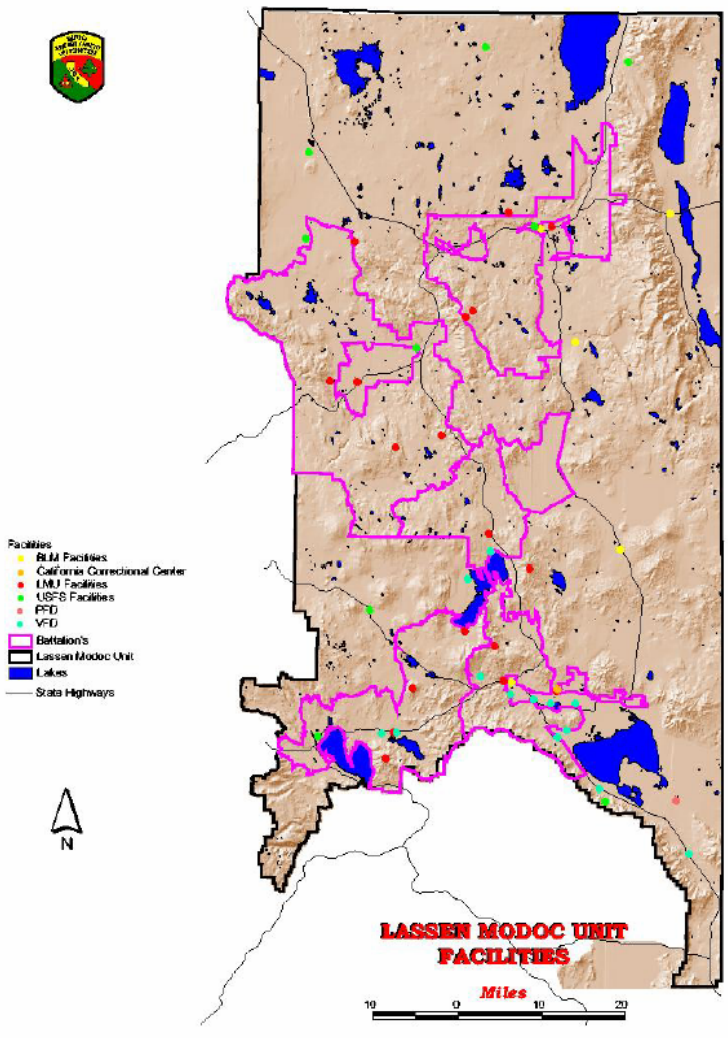
The Almanor Basin consists of Chester, Almanor, Almanor West, Prattville, Peninsula, Hamilton Branch, Canyon Dam, Clear Creek and Westwood. The Big Valley area includes the communities of Bieber, Nubieber, Lookout, and Adin. The Alturas area consists of the towns of Alturas, Likely, Canby, Cedarville, Davis Creek and the community of Cal Pines.

U.S. Highway 395 runs north to south along the east side of the Unit, from Lakeview, Oregon to Reno, Nevada. State Highways 139, 299, 44 and 36 transect the Unit west to east. Numerous visitors and transients travel these routes throughout the year, as well as the interstate commerce from the Sacramento Valley and Oregon in search of a shorter way to the eastbound interstate highways.

Logging, correctional institutions and recreation are the major industrial economic factors to the region. Over the past few years, logging has diminished due to environmental concerns and regulations from the Federal and State governments. Recreation, although very seasonal, flourishes during the spring and summer months. Watershed from the Unit flows to the Feather River and the Sacramento River. Most of these watersheds are the head waters to these major rivers in the state.

The Lassen-Modoc Unit has:

8 Fire Stations
13 front line fire engines
2 reserve fire engines
5 Lookouts
3 Conservation camps
Susanville Training Center,
3 medium bulldozers
A medium helicopter.



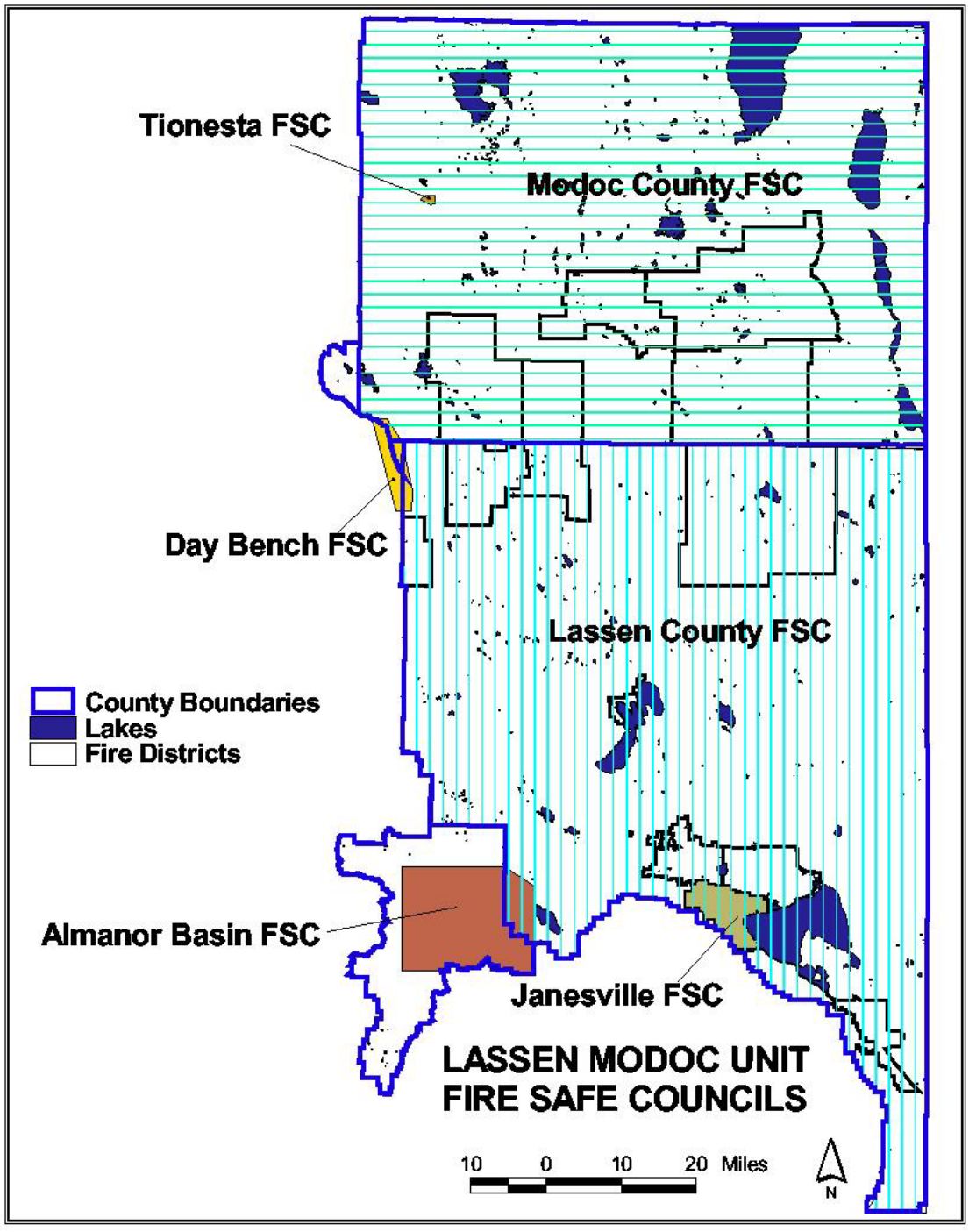
Volunteer fire departments provide structure fire protection within the unit, with paid Departments in Susanville City, Janesville, Westwood, West Almanor, Peninsula, Hamilton Branch and Chester. During the winters of 2001 through 2003, the Unit had Amador Agreements in the communities of the Standish-Litchfield, Westwood, Stones – Begard, Bieber and Janesville Fire Protection Districts. It is anticipated that these contracts will continue in the future as well as other Amador contracts with other departments which have been in contact with the Unit Administration.

The Susanville Interagency Fire Center dispatches for all of the departments in Lassen County and the Almanor Basin and the Calpines Fire District in Modoc County. The balance of the fire departments in Modoc County are dispatched by the Modoc County Sheriffs office.

Additional cooperating government agencies within the Unit are:

Lassen National Forest
Plumas National Forest
Modoc National Forest
Natural Resource Conservation Service
Bureau of Land Management
California Department of Fish and Game
Cal Tans
California Highway Patrol
Department of Defense, Herlong Army Depot
Lassen County Sheriffs Office
Plumas County Sheriffs Office
Modoc County Sheriffs Office
City of Susanville
Public works and County offices of Lassen, Modoc and Plumas County.

Fire Safe Councils within the Lassen Modoc Unit



Fire Safe Councils

During 2001 and beginning of 2002, the Lassen County Fire Safe Council was formally developed. The council assisted the County of Lassen and their consultant, in the development of the Lassen County Fire Safe Plan. This plan is being funded by a grant from the National Fire Plan Grant and was completed in January 2004.

This fire plan identifies treatment areas in close proximity to 22 of the communities within Lassen County. The plan also suggests protective measures that could improve the survivability of one's home or business in the various fuel types located within the Lassen Modoc Unit.

The Council has taken the initiative to identify many locations for potential projects that would improve the fire safety of the communities within Lassen County. The following is a list of proposed projects. The costs have not been determined, except for those which have been submitted for through the grant application process, or the projects which are currently in progress. The projects are listed by geographical area and the closest CDF Battalion is referenced.

Susanville / Gold Run Area (Battalion 1)

Diamond Mountain Shaded Fuel Break Phase 1: Work on the Diamond Mountain Shaded Fuel Break began in April of 2004. This fuel break is located along the north aspect of the Diamond Mountain. It varies in elevation from 5500' to 6000' and extends between the Diamond Mountain Motorway and Elysian Valley north of Janesville. The length of this fuel break is approximately 12 ½ miles long. There is an escarpment on the Honey Lake Valley side of this mountain where it drops into the Gold Run / Susanville area. The area is heavily timbered. Many of the trees on this mountain have been exposed to bug kill and drought stress over the last 20 years and as past fire history of the area shows, fires originating on this mountain burn downhill at tremendous rates. $80,000 has been provided through a Forest Service Community Protection Grant and $20,000 has been provided the Lassen County RAC Title II money.

The fuels will be managed through thinning, chipping for bio-mass or blown back on to the ground. In some cases these fuels will be masticated or burned. Ladder fuels will be removed, some trees will have to removed, to open up the crown, and improve forest health.

This project has been submitted to the National Fire Plan and was partially funded. $80,000 was received, however due to the fuel loading additional monies will need to be located. (Appendix A)

Diamond Mountain Shaded Fuel Break Phase 2: This shaded fuel break will run from the Devil Fire of 2001 to the south along Cheney Creek for approximately 1 ½ miles and the travel to the east for another mile. This will involve limbing up trees and removing brush to eliminate ladder fuels, removing dead or decadent bitterbrush, sagebrush, junipers and pines. It will be approximately 500 feet wide. Grant money has been request. Lassen County RAC has granted $30,000 in Title II money. This shaded fuel break will provide an area to slow the spread of an advancing fire spreading into high valued homes and range land on west side of Susanville. (Appendix A)

Gold Run Shaded Fuel Break or Fuels Reduction Zone: The location is undetermined. The project will connect to the Hidden Hills Shaded Fuel Break and will run along the top of the ridge above Gold Run Road to the southwest. There are high value homes located in this area. This project will provide a zone of reduced fuels which will slow the spread of a wildfire and a safer environment in which firefighters can work. (Appendix A)

Community Clean-up and Educational Outreach: The goal of the Fire Safe Councils is to produce educational information to involve the residents in creating a fire safe community and improve the fire safety around their homes. The details of this project are still under development.

Susanville West – Paiute Creek Canyon Fuels Reduction: This project area starts near the intersection of County Road A-1 and Highway 36 and includes the privately owned along the north slope of the Susan River Drainage, it continues east to the Pine Street and Highway 36 intersection and then turns north and ends at Bagwell Springs. 36. In 2001 the Devil fire burned over 4000 acres of timberlands on the south side of the Susan River Drainage.

The project has been divided into manageable areas for the ease of work and when applying for grant money. In 2002 a $120,000 grant was awarded to the Lassen Fire Safe Council through the Sacramento Regional Foundation, Community Wildfire Prevention Program for Area A (300 acres) of this project. The work in Area A was completed in November 2003.

The treatment involved thinning of dead or dying trees, removal of some of the bitterbrush, and removal low hanging or dead limbs. The by-products were chipped

and burned. The small amount of these by-products was not cost effective to bio-mass.

A second grant was applied for in 2002, through the National Fire Plan for Area "D". Area "D" is located within the City of Susanville and includes Inspiration Point, a scenic overlook, and several private homes in need of fuels treatment. Several of the private homes in Area "D" had large quantities of bug-kill trees and needed a means of disposing of these bug-infested trees before the infestation was given the opportunity to spread to other fuels in the area. Project area "D" is approximately 110 acres however, not all of the acreage needed to be treated. The fuels treatment in area "D" was focused on reducing wildfire potential within the City. The total amount received for this grant was $29,000. The work was completed in the winter of 2003. Additional projects are currently being planned and additional grant sources are being researched by the Fire Safe Council.

The Lassen County Board of Supervisors fully supported this project and several others identified by the Fire Safe Council. This was demonstrated in 2002 when the council applied for non-profit status. Each member of the Board donated $100.00 from their own pockets to the council for application fees. The support from the Lassen County Board of Supervisors has been outstanding. (See Appendix B)

Lake Forest Estates (Battalion 1)

Senior Citizens Fuels Reduction Project: The community of Lake Forest Estates has many residents who, due to age or physical limitations, have a difficult time clearing forest fuels from around their homes. Therefore, grant money is needed to hire a contractor to assist these people in fuels reductions around their homes. Many homes are located in the timber and many of the properties are over-grown to the point that a person cannot see a home 50 feet from the road. This type of fuel loading would be disastrous in the event of a wildfire. (See Appendix B)

Community Chipping/Clean-up –Fuels Reduction: A project of this type would provide a way for the residents to clean their properties and reduce forest fuels. This will require a grant to pay for a contractor to come into the community and assist in the removal of fuels and provide for the disposal of products produced from this project. Project is in the planning process. (See Appendix B)

Vacant Lot Fuels Reduction: Many of the lots or parcels in Lake Forest are vacant and are so over grown with forest fuels that any fire starting in the Lake Forest area would rapidly grow into a major wildfire and threaten the surrounding homes. There are no current laws or ordinances in the Lassen County to provide any means to enforce clean up of these parcels. The Fire Safe Council is currently looking at ways to present this needed regulation and enforcement to the Board of Supervisors. (Appendix A)

Milford Area (Battalion 1)

Milford Shaded Fuel Break: This shaded fuel break will be a continuation of the shaded fuel break in the Janesville area. It will be placed on the escarpment to the southwest of the community, it will provide firefighters an area from which to control a fire and will improve firefighter safety during in the event of a wildland fire. This project is to be developed. (Appendix A)

Community Chipping and Fuels Reduction Program: This type of project would provide a way for the residents to clean their properties and reduce surrounding forest fuels. This will require a grant for a contractor to come into the community and assist in the removal of these fuels and provide a means of disposal of the products produced from this project. The project is to be developed. (Appendix A)

Herlong Area (Battalion 1)

Community Fuels Reduction Program: This project will provide a way for the residents to clean their properties and reduce fuels. This will require a grant for a contractor to come into the community and assist in the removal of these fuels and provide a means of disposal of products produced from this project. This project is to be developed. (Appendix A)

Community Clean-up and Educational Outreach: The Fire Safe Council is looking at ways of motivating the community to clean around their homes, as well as removing fuels that would burn if a wildfire were to encroach on their home. This might include a community chipping program. The details of this project are to be developed. (Appendix A)

Doyle Area (Battalion 1)

Fuels Reduction Zone: The community of Doyle has been threatened by wildland fires a number of times in the last 20 years. Several of these fires were ignited by lightning and burned down the slope from the Plumas National Forest and into the community of Doyle. The area is covered by grass, bitterbrush, and sage brush with an occasional juniper. Prevailing winds as well as the natural convectional air flow off the Sierra Nevada range and down into Doyle/Honey Lake areas are the driving force, pushing the fires into Doyle. The Fire Safe Council has proposed that a fuels reduction zone be identified to the west of town, between the Forest and the town, to reduce the threat of fire. This project is undeveloped. (Appendix A)

Community Clean-up and Educational Outreach: The Fire Safe Council is looking at ways of motivating the community to clean around their homes by removing fuels that would burn if a wildfire were to encroach on their home. This might involve a community chipping program. The details of this project are still under development. (Appendix A)

Eagle Lake Area (Battalion 1)

Eagles Nest Recreational Area
Community Chipping and Clean-up: A shaded fuel break would provide a way for the residents to clean their properties and reduce forest fuels. The Eagles Nest area is a recreational community; it is the plan of the Fire Safe Council to assist these residents in cleaning around their homes/cabins. This might involve a community chipping program... The details of this project are still under development. (Appendix A)

Stones-Bengard/Spaulding Area

County Road A-1 Shaded Fuels Reduction: Develop with the Bureau of Land Management, a shaded fuels reduction zone along County Road A-1, from State Highway 139, south to the community of Spaulding. This will thin the standing junipers and brush along the county road, which would provide an area to the West of both Stones-Bengard and Spaulding. BLM is actively working on this project. (Appendix A)

Bucks Bay and Rocky Point Fuels Reduction: This project will reduce the ladder and ground fuels around these two geographical areas and the homes located there. This will also tie into the County Road A-1 Shaded Fuels Reduction Project. Both of these locations are to the south of Stones-Bengard subdivisions. This project is still to be developed. (See Appendix B)

Community Chipping and Cleanup: Will provide a way for the residents to clean their properties and reduce forest fuels. This would require a grant to hire a contractor who would come into the community and assist in the removal of these fuels and provide a means of disposal of any products produced from this project. Still to be developed. (Appendix A)

Merriville Ranch Road Area (Battalion 1)

Shaded Fuel Break: This is still to be identified and developed. The proposed shaded fuel break would run along the mountains to the south of the community, providing a means to control or extinguish a wildfire burning toward the valley. The land to the south is standing timber and managed by private timber companies, so this could also involve a fuels reduction project involving a commercial chipping or bio-mass project. (Appendix A)

Community Chipping and Cleanup: Will provide a way for the residents to clean their properties and reduce forest fuels. This would require a grant to hire a contractor who would come into the community and assist in the removal of these fuels and provide a means of disposal of any products produced from this project. Still to be developed. (Appendix A)

Janesville Fire Safe Council
(Battalion 1)

In 1997, a Forest Stewardship Grant was applied for by the Honey Lake Valley Resource Conservation District (HLVRCD), Janesville Fire Protection District and CDF for the development of a fire hazard reduction and forest health project in and around the community of Janesville, California. The grant was approved and shortly there after an advisory group made up of the HLVRCD, Janesville FPD, CDF, Lassen County Sheriffs Office, Lassen National Forest, Plumas National Forest, and homeowners from the community, formed a Fire Safe Council for this project.

This Fire Safe Council has continued to work on and develop other projects within the community of Janesville. A Wildland Urban Interface (WUI) grant was secured to develop an evacuation plan pamphlet for the community. This project has been completed and the pamphlets handed out by the Boy Scout troop and Fire Safe Council members within the Janesville community.

The Council has taken the initiative to identify many potential projects for the Janesville area. These projects fit in to the Lassen County Fire Safe Council's project plan. The following are the proposed projects, however the costs have not been determined. Some of these projects have been applied for to various grant programs, or have been awarded and are currently in progress.

Janesville Shaded Fuel Break: A need for a Shaded Fuel Break was identified in the Janesville Fire Safe Plan. In 1998, this project was started with a Timber Harvest Plan (THP) on the Laraway property. This project included thinning a stand of timber and brush removal generating merchantable timber and bio-mass products. Antelope Conservation Camp Crews were used after the THP was completed to clean up through pile burning during the winter. (Appendix A)

Neighboring property owners have had work done along the proposed shaded fuel break. This project was submitted to the National Fire Plan in 2003 for a grant and was awarded $80,000 in Spring of 2003. The work scheduled to be done includes approximately 100 acres of the shaded fuel break near the south side of the community below Thompson Peak. . This work will began in autumn of 2003. (See Appendix B)

Janesville Roads Fuels Reduction Project: This project consists of fuels reduction efforts on the main roads in the area of the Janesville Shaded Fuel Break. These

provide wider sections on the main fuel break. The Fire Safe Council is looking for a funding source for this project. (Appendix A)

Janesville Private Timber Management Plan: This plan will identify fuels and recommend treatment for the fuels on private property throughout Janesville. A Registered Professional Forester will be hired to write the treatment plans, and the plan will then be made available to the community. This project was submitted in 2001 to the WUI grant process, and was awarded in March of 2003. The contract request was sent to the Contracting office in Sacramento in September 2003. There has been no contract written to date. (Appendix A)

Senior Citizen and Physically Challenged Fuels Reduction Program: Under the Community Based Grant application for 2002, a proposal for a Fuels Reduction project was submitted. The goal was to accomplish fuels reduction work on property owned by senior citizens and those who are physically challenged. An area of approximately one acre was be thinned and/or pruned proximal to the residential structures. The grant was awarded in October of 2002 and work began in January of 2003. This project utilized a local private contractor to do the work. The grant total was for $92,300. (Appendix A)

Janesville Emergency Radio Broadcast System & Emergency Air Horn: These items were requested on a WUI grant in 2002 by the Fire Safe Council. The goal of this project is to have an emergency air horn which will sound in the event of an emergency or evacuation. The residents could then tune to the emergency radio frequency to receive instructions or find out if their area is being evacuated. The Fire Safe Council is researching grant options. (Appendix A)

Janesville Fire Suppression Water Storage Tanks: The Janesville Fire Safe Plan calls for the strategic placement of 10,000 gallon water tanks within the Community of Janesville. These water tanks are to be used for emergency water supply in the event of a wildfire. These tanks are to be placed near seasonal or year round running springs or streams, and designed to catch water in order to remain full. It is recommended that these tanks be located high on the hills above the community, so they can be utilized in a future hydrant system. These tanks are to be constructed out of concrete and freeze protected. (Appendix A)

Westwood – Clear Creek Area (Battalion 2)

Westwood – Clear Creek Shaded Fuel Break: This shaded fuel break will be located on the south side of both of these communities. Much of this land is owned by Sierra Pacific Industries and Roseburg Lumber Company, so it could include a commercial thinning project. A portion of the land is within the proposed Dyer Mountain Recreational Area, which is currently being developed.

The Dyer Mountain Recreation Project is scheduled to be a four season recreational area and will include golf courses, a ski area, and a residential

development. Planning for the shaded fuel break will begin in the winter of 2004/05. (Appendix A)

The private timber companies with land holdings surrounding Westwood, Pinetown and Clear Creek are actively working on defense zones in the timbered area around the populated areas.

Community Clean-up and Educational Outreach (Pinetown): The area known as Pinetown is located to the East of Westwood, and is surrounded by timbered wildland. Many of the homes here are located in the trees. A chipping program would complement homeowner efforts. The Fire Safe Council will be developing fire safe material particular to the community. This project is still to be developed. (Appendix A)

Almanor Basin Fire Safe Council
(Battalion 2)

In the winter of 2000/01, a group made up of CDF, USFS, local Fire Protection Districts, and Foresters from the timber industry met at the Chester Fire Station and discussed a project to construct a shaded fuel break around the Almanor Basin. Shortly thereafter, the Almanor Basin Fire Safe Council was formed. The area for the shaded fuel break was determined and work began.

The Almanor Fire Safe Council applied for a grant from the Wildland Urban Interface Grant program, for the development and publication of an Evacuation pamphlet for the basin communities. In 2001 the grant was awarded and the Evacuation pamphlet was completed and has been handed out locally.

The council has also developed and published a Fire Plan for the basin. The council is continually holding community meetings around the basin to solicit input from the citizens of each community as well as to heighten the awareness to the Fire Safe Council.

The council is also looking at putting a fuel break with the Plumas National Forest west of the community of Canyon Dam. This is a proposed stewardship agreement.

Other projects identified by the council currently being submitted for application to various grants include:

Almanor Basin Community Chipping and Clean up Project: The council applied to the National Fire Plan with the sponsorship from the Lassen County Fire Safe Council for this grant. The grant was awarded in July of 2003 in the amount of $20,000. This project has been extended and is currently scheduled for the hiring of a contractor to prune or cut, collect, chip and haul away forest fuels from properties in and around the Clear Creek. (Appendix A)

Almanor Basin Shaded Fuel Break: The work on this shaded fuel break was initially started by Collins Pine Lumber Company, Roseburg Lumber Company, and Pacific Gas and Electric Company. In 2001, a WUI grant was applied for and was awarded in 2003 and was funded in November 2004. The work on this project began in spring of 2004; however the grant expired at the end of June 2004. The plan for this grant was to hire a private crew to work on the private property and around residences and to utilize CDF inmate crews on public and private land away from residences. The request for a contract to hire a private crew was submitted to the CDF contracts office in September of 2003, however no contract was written. The goal of this project is to thin the forest fuels to prevent the possibility of a wildfire coming out of the communities into the surrounding timberlands, or from the timberlands into the communities of the basin. The grant funded by the Wildland Urban Interface Program is for $96,248 in November 2003. (Appendix A)

Almanor Basin Emergency Alert System: This project will provide an alert system for the notification to the public within the basin area in the event of an emergency incident or evacuation. This need was identified by the evacuation plan and fire plan for the Almanor Basin, as no local radio stations are located in the basin area. Grant funding is being researched. (Appendix A)

Little Valley Area (Battalion 3)

Little Valley Shaded Fuel Break: Develop a shaded fuel break to the west and south of the Community of Little Valley. The fuels of the National Forest to the south are that of heavy standing timber, and to the west is grass/juniper/sage moving into large concentrations of brush, then timber into the community. This shaded fuel break will provide a means of controlling a wildfire burning into the community and improve firefighter safety. The location of the project and implementation are still to be developed. (Appendix A)

Community Chipping and Cleanup: Will provide a way for the residents to clean their properties and reduce forest fuels. This would require a grant to hire a contractor who would come into the community and assist in the removal of these fuels and provide a means of disposal of any products produced from this project. Still to be developed. (Appendix A)

Pittville/ Day Bench Area (Battalion 3)

Community Clean-up and Educational Outreach: The Fire Safe Council is looking at ways of motivating the community to reduce the fuels that would burn if a wildfire were to encroach on their home. This might involve a community chipping program. The details of this project are still under development. (Appendix A)

Many of these 22 projects are also identified in the Lassen County Fire Safe Plan which was finished in January 2004. The executive committee of the Lassen County Fire Safe Council identified these projects in January of 2003. These projects will be

refined and developed into the Lassen County Fire Plan and ready for submittal for grant application. (Appendix A)

Lassen/Day Bench Fire Safe Council
(Battalion 3)

The Lassen/Day Bench Fire Safe Council was formed in the summer of 2001. This Council was developed in concert with the grant application to the National Fire Plan, by CDF, Bureau of Land Management and the Lassen National Forest. This council's area consists of Day Bench and Day Road area. The Day Road Community extends through Lassen, Modoc, Shasta, and Siskiyou Counties.

In 2002 they council completed a 10 acre demonstration area at the intersection of Day Road and Highway 299using a brush rake to reduce the fuels. In 2003 they did a second demonstration project that included fuels reduction on 27 acres through mechanical mastication.

The council is in the preparation phase for a fuels reduction project that will complement a similar project along Day Road that the Lassen National Forest is doing. The Lassen National Forest is implementing the National Fire Plan to reduce fuels along the Day Road area using crews to do hand work and burning later in the fall. Lassen Day Bench has received $335,000 from several sources, including: $200,000 from a USDA Community Protection Grant, $75,000 from Shasta County RAC, $30,000 from Modoc County RAC and $30,000 from Lassen County RAC. (Appendix A)

Modoc Fire Safe Council
(Battalion 4)

The Modoc County Fire Safe Council was formed during the winter of 2000/01. The Modoc County Board of Supervisors had passed a resolution to support and assist in the development of this council. A group of concerned citizens from the Alturas and outlying areas met with Lassen – Modoc staff to put together the council.

In 2000, the council applied for and received a grant from the Bureau of Land Management's Wildland Urban Interface grant program to develop and distribute an evacuation plan for the residents of Modoc County.

The council is working with the Lassen County Fire Safe Council, the Day Bench Council, and the various agencies in Modoc County to develop fire safe communities. In the summer of 2003, the council completed a fire plan for Modoc County which was funded by the National Fire Plan in 2001.

Cal Pines Community Shaded Fuel Break and Fuels Reduction Project: Much of the Cal Pines community is located within a timber belt. These forest fuels have the potential to produce a devastating wildland fire. In the past 100 years, this area has

had numerous fires greater than 300 acres in size. During the last 30 years, many of many new homes have been built in this same fire area. $15,000 was received from the Modoc forest to begin working on this project. The CEQA and NEPA are completed. Ground work should begin in fall of 2004.

The goal of this project is to reduce forest and ladder fuels which would carry fire through the area, and to identify and develop shaded fuel breaks in the area which would improve firefighter safety. Fuels reduction would also provide a means to control if not extinguish any potentially devastating wildfire. (Appendix A)

Modoc Estates Fuels Reduction and Community Chipping Project: The goal of this project would provide a method for the residents of the Modoc Estates to clean their properties and reduce forest fuels. This would require a grant for a contractor to be hired to come into the community and assist in the removal of these fuels and a means for the disposal of any products produced from this project. Still to be developed. (Appendix A)

Southerland Estates Fuels Reduction Project: The community of Southerland Estates is located on the south side of State Highway 299, in the Warner Mountains. This community is located in the timber, on a southwestern slope and would be impacted by a wildland fire. This project will identify fuels reduction treatments which would lessen the threat to the community thus improving the chances for the community to survive a wildfire. Still to be developed. (See Appendix (Appendix A)

Assets at Risk

The primary goal of wildland fire protection in the Lassen-Modoc Unit is to safeguard the wide range of assets found within the unit from the effects of wildfire. The assets at risk, both public and private, are to be protected. The following have been identified as assets at risk to wildfires and include both economic and non-economic assets: people, structures, timber, watershed, wildlife, unique scenic and recreation areas, range, and air quality. The table below provides a description of the evaluated assets.

Asset at Risk	Public Issue Category	Location and ranking methodology
Hydroelectric power	Public welfare	1) Watersheds that feed into river power plants, ranked based on plant capacity; 2) cells adjacent to reservoir based plants (Low rank); and 3) cells containing canals and flumes (High rank)
Fire-flood watersheds	Public safety Public welfare	Watersheds with a history of problems or potential for future problems, ranked based on affected downstream population
Soil erosion	Environment	Watersheds ranked based on erosion potential
Water storage	Public welfare	Watershed area up to 20 miles upstream from water storage facility, ranked based on water value and dead storage capacity of facility
Water supply	Public health	1) Watershed area up to 20 miles upstream from water supply facility (High rank); 2) grid cells containing domestic water diversions, ranked based on number of connections; and 3) cells containing ditches that contribute to the water supply system (High rank)
Scenic	Public welfare	Four mile view-shed around Scenic Highways and 1/4 mile view-shed around Wild and Scenic Rivers, ranked based on potential impacts to vegetation types (tree versus non-tree types)
Timber	Public welfare	Timberlands ranked based on value and susceptibility to damage
Range	Public welfare	Rangeland ranked based on potential replacement feed cost by region/owner/vegetation type
Air quality	Public health Environment Public welfare	Potential damages to health, materials, vegetation, and visibility; ranked based on vegetation type and air basin
Historic buildings	Public welfare	Historic buildings ranked based on fire susceptibility
Recreation	Public welfare	Unique recreation areas or areas with potential damage to facilities, ranked based on fire susceptibility

Structures	Public safety Public welfare	Ranked based on housing density and fire susceptibility
Non-game wildlife	Environment Public welfare	Critical habitats and species locations based on input from California Department of Fish and Game and other stakeholders
Game wildlife	Public welfare Environment	Critical habitats and species locations based on input from California Department of Fish and Game and other stakeholders
Infrastructure	Public safety Public welfare	Infrastructure for delivery of emergency and other critical services (e.g. repeater sites, transmission lines)
Ecosystem Health	Environment	Ranking based on vegetation type/fuel characteristics

The assets at risk are evaluated to the 450 acre scale within the Lassen-Modoc Unit. This scale has been designated by the Department for purposes of manageability. These 450 acre cells have been designated as Quad 81st. This designation is based on the sectioning of a USGS 7.5 minute quadrangle map broken down into a 9x9 grid pattern; this process results in squares of 450 acres. Fire plan assessments have been made at the Q81st level. For instance, each Q81st in LMU has a ranking applied to it for Level of Service (LOS), Assets at Risk (AAR), fuel hazards, etc.

Each asset is validated by the unit personnel, stakeholders and interested parties, as to the weight and value placed on the Q81 for that asset. Once this process is completed, the LOS calculation is run and the value for that cell is applied, thus giving that cell its weighted value, and producing the aggregated relationship for that area. (For more information regarding the evaluation of asset susceptibility, refer to the California Fire Plan.)

http://www.fire.ca.gov/FireEmergencyReponse/FirePlan/FirePlan.asp

The ranking is scaled to the Q81st and transferred to GIS maps. Map overlays will be evaluated by unit staff for identification of the areas with the highest combined asset values and fire risk to be targeted for fire management activities. The scores for the various assets at risk are given a 1 (low) score out of a possible 9.999 (high). Infrastructure, non-game wildlife, and range scores were given a score of 2. Timber was given a 3 and structures were given a 5. Many factors are involved in target area identification, including political climate of the region and suppression cost reductions.

The process of explicitly enumerating assets at risk also helps to identify who benefits from those assets. It is a premise of the California Fire Plan, on which this plan is structured, that those who benefit from the protection of an asset should pay for that protection. These assets will be continuously evaluated by the Lassen Modoc Unit personnel during planning stages.

General Description of the Current Fire Problem
Level of Service

The Lassen Modoc Unit has a strong cooperative relationship with federal and local government firefighting agencies in addition to the Governor's Office of Emergency Services. This cooperation is formally defined and authorized in interagency agreements. This includes the four-party agreement with the federal agencies, and the Master Mutual Aid Agreement, with local government. Mutual aid agreements and cooperative agreements with all fire departments and fire protection districts are also in place within the Unit. The cooperative efforts of fire service providers comprise the entire fire protection delivery system within the Unit.

LEVEL OF SERVICE RATING

The legislature has charged the Board of Forestry and CDF with delivering a fire protection system that provides an equal level of protection to lands of similar type and is based in *Public Resources Code 4130*. In order to do this, CDF needed an analysis process that would define a level of service rating that could be applied to the wildland areas in California to provide a comparison of the level of fire protection being provided. The rating is expressed as the percentage of fires that are successfully attacked. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred.

California has a complex fire environment, and CDF data on assets at risk to damage from wildfire is incomplete. These factors combine to make it very difficult to develop a true performance-based fire protection planning system. CDF has resorted to prescription-based fire protection planning (travel times of firefighting resources to incidents, report times for the detection system, the same acreage goal statewide, etc.) as a way to overcome the complexity of the issues. Prescription-based planning is possible but tends to oversimplify some issues. Prescription standards also make it difficult to integrate the interrelationships of various fire protection programs, such as the value of fuel-reduction programs in reducing the level of fire protection effort required.

The following approximation method is proposed to overcome these shortcomings and allow the Unit to proceed with a damage-plus-cost analysis of fire protection performance. This is a relative system, attempting to measure the impact of fire on the various assets at risk. At the same time, this process produces a level of service rating (LOS). The rating can be used to describe fire protection services to civilian stakeholders. The level of service rating also provides a way to integrate the contribution of various program components (fire prevention, fuels management, engineering and suppression) toward the goal of keeping damage and cost within acceptable limits. It is important to reiterate that this system is a relative system and that the ratings are only approximations. In this system, a fire may be considered a failure, based on the firefighting resource draw and size of fire; however, the final fire size and assets protected may have been a true success based on firefighting activities in extreme fire weather conditions.

The Level of Service (LOS) rating is a ratio of successful fire suppression efforts to the total fire starts, a method to measure initial attack success and failure rates throughout the Unit and is based on fire sizes. The LOS uses a Geographic Information System (GIS) that overlays a 10 year history of wildfires onto a map and derives the average annual number of fires by size, severity of burning and assets lost. This data provides an LOS rating, in terms of a success and failure calculation.

$$\text{Success Rate} = \frac{\text{Annual number of fires that were small and extinguished by initial attack}}{\text{total number of fires}} * 100 = \text{Success rate in percent}$$

The result is an initial attack success rate in percentage of fires by vegetation type and area. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred and where initial attack resources are sufficient to control wildfires.

The Fire Plan Ignition Workload Assessment map is designed to show effectiveness of the suppression organization in meeting the initial attack fire workload. The attempt at controlling fires before they become large and costly is evaluated in this assessment. The underlying assumption is that fires, successfully contained in the initial attack stages, are not the primary problem. Problem fires are the few that are costly to control or exceed suppression organization capabilities and cause damage.

Fires are grouped into "success" and "failure" categories based on various factors. The assessment groups fires by general vegetation or fuel types (planning belts). Within the fuel type, fires are further classified based on final fire size and weather conditions at the time of ignition. Each fire is classified and labeled as either a successful initial attack or a failure.

The initial attack workload assessment is displayed in the maps below with statistical data related to these maps. Initial attack points of origin are plotted and color-coded based on success/failure scores. Some of the successes and failures are not matched with weather readings and are shown on this analysis. Further validation will be conducted to match weather with the ignitions in the future. The workload can be summarized in the Quad 81st grid. Results can also be summarized into a percentage success score and displayed by Quad 81st grid. Combining fire business workload patterns with aggregated assets at risk can be useful in defining target areas for focusing Pre-fire Management project efforts.

Initial attack Success and Failures:

Ten year period for analyses May thru November, 1994 to 2003; planning belt vegetation types were analyzed.

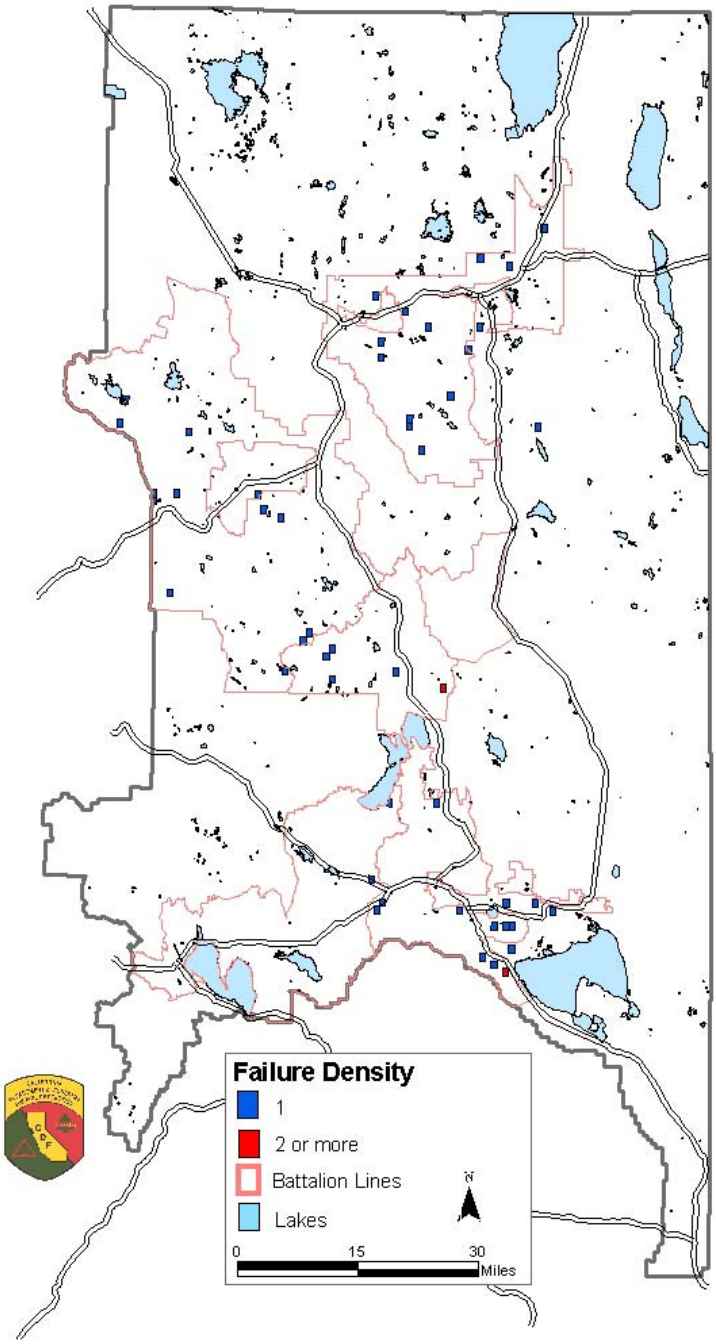
Planning Belt	Success Rate	Successful I.A.	I.A. Failure
Grass	96%	27	1
Brush	97%	63	2
Interior	98%	563	9
Woodland	96%	569	20
Agricultural or Urban	92%	89	7

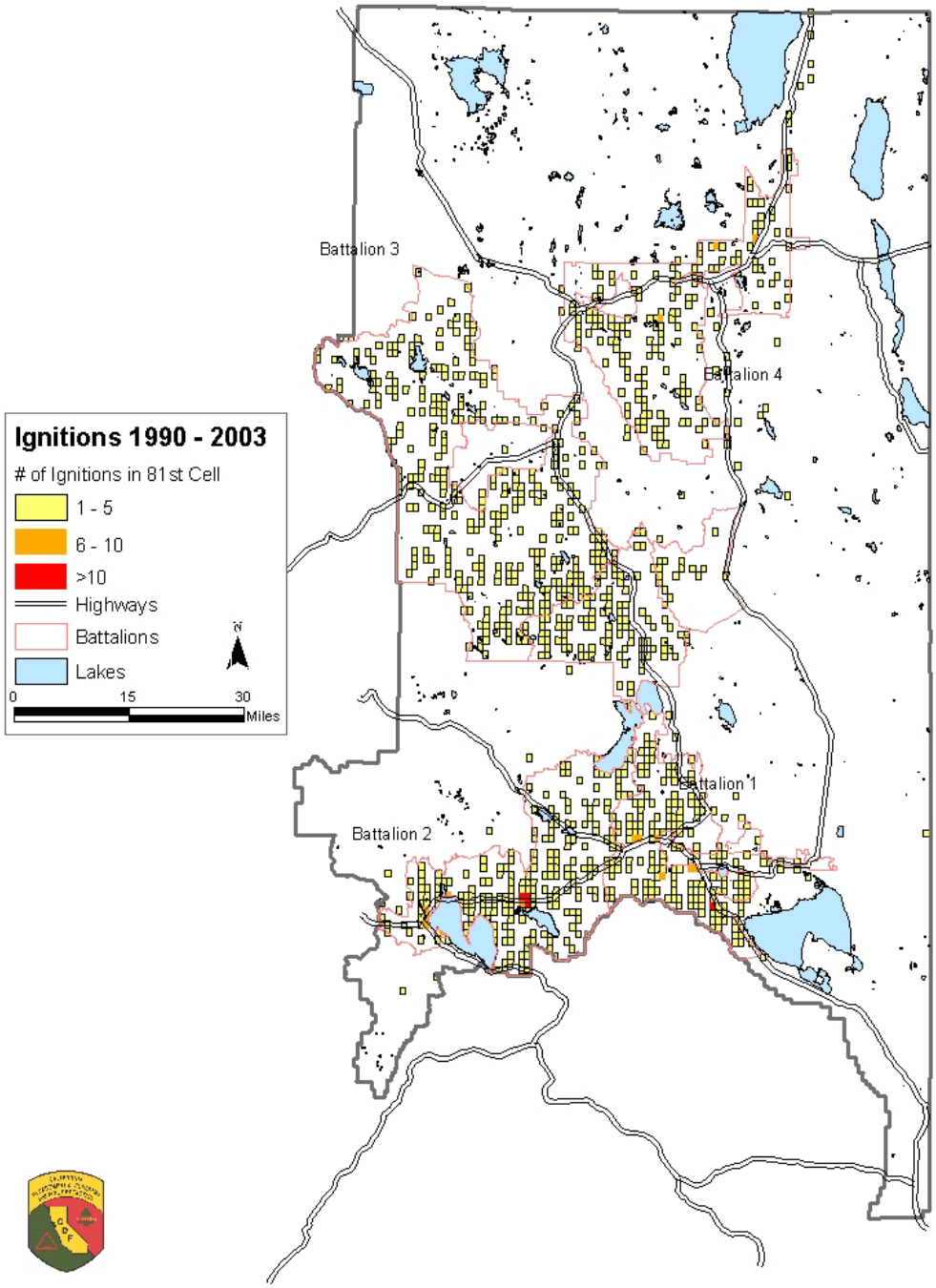
Initial attack Success and Failures for 2003:

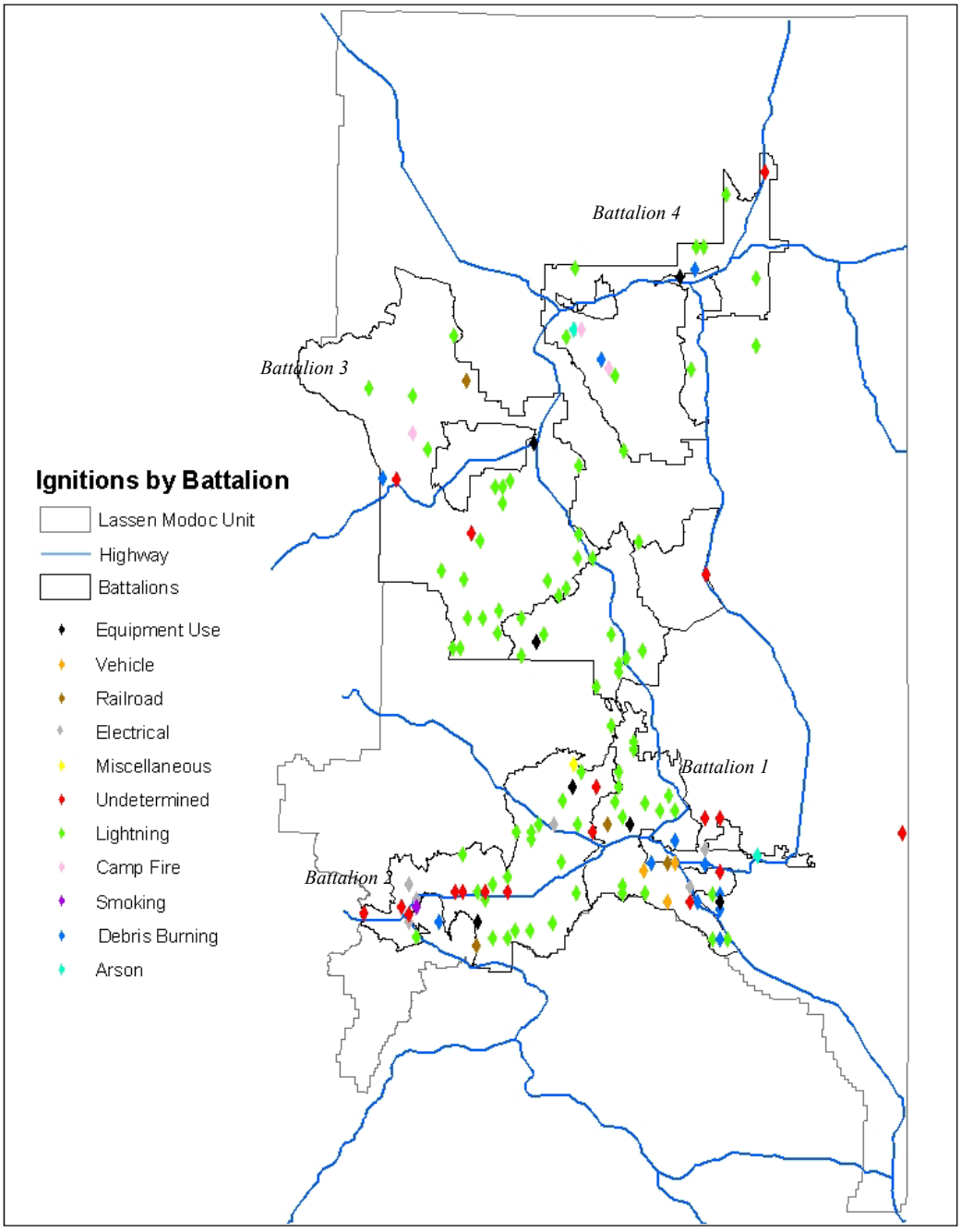
Planning Belt	Success Rate	Successful I.A.	I.A. Failure
Grass	100%	5	0
Brush	100%	5	0
Interior	100%	59	0
Woodland	98%	52	1
Agricultural or Urban	90%	10	1

Failures were defined as:

Grass: Fires = 10 acres and above
Brush: Fires = 5 acres and above
Interior: Fires = 3 acres and above
Woodland: Fires = 5 acres and above
Agricultural or Urban: Fires = 10 acres and above

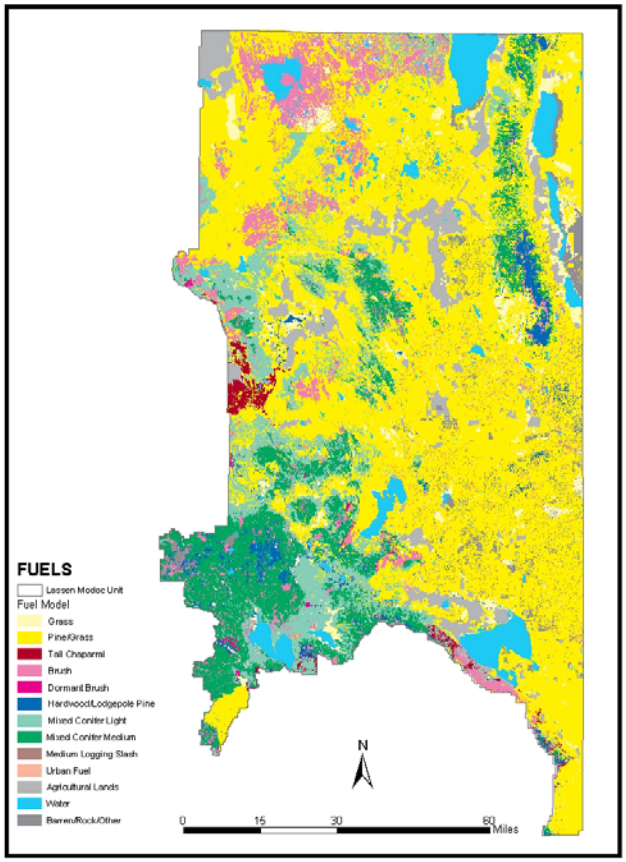

Failure Density
1
2 or more
Battalion Lines
Lakes
N
0
15
30
Miles


Ignitions 1990 - 2003
# of Ignitions in 81st Cell
1 - 5
6 - 10
>10
Highways
Battalions
Lakes
0
15
30
Miles
N
Battalion 3
Battalion 4
Battalion 1
Battalion 2


Ignitions by Battalion
Lassen Modoc Unit
Highway
Battalions
Equipment Use
Vehicle
Railroad
Electrical
Miscellaneous
Undetermined
Lightning
Camp Fire
Smoking
Debris Burning
Arson
Battalion 4
Battalion 3
Battalion 1
Battalion 2

FUELS

The fuels assessment is used to explain the local fire situation. This can help focus attention on fuels management related solutions. These fuels are identified as defined in the "Aids to Determining Fuel Models for Estimating Fire Behavior" NEFS 1574 by Hal E. Anderson.



Fuel models for the National Fire Danger Rating System (NFDRS) have increased to 20, while fire predictions and applications have utilized the 13 fuel models tabulated by Rothermal (1972) and Albini (1976). These fuels have been classified into four groups- grasses, brush, timber and slash.

In the fire plan, we use these fuel models to develop assessments considering the current flammability of wildland fuels, given the location on the slope, the average fire weather severity conditions, ladder fuels and crown density. Each fuel has its own burning characteristic based on various inherent factors, such as fuel moisture content, arrangement and volume. All of these contribute to how a fire will spread in intensity, and ultimately, threaten assets.

Fuel loading is measured in tons per acre; grass is considered a light fuel with approximately ¾ tons per acre. Conversely, thick heavy brush, a heavy fuel, can have a volume of over 21 tons per acre. Fire intensity is directly related to the fuel loading over the landscape. Grass will burn rapidly with short periods of intense and maximum heat output and brush will produce greater heat output for a longer period of time, thus increasing the difficultly to control.

The arrangement of these wildland fuels is critical to how the fuel behaves during a wildfire. Un-compacted fuels, such as grass, will allow for rapid fire spread since more of its surface can be heated at one time. Compacted fuels, such as pine litter, burn slower because heat and air reach only the top of the fuel.

FUEL TYPES

Vertical arrangement refers to a fuel's ability to spread upward into the tree tops. These are called ladder fuels and are influential factors in fire spread. The ignition of ladder fuels allows the fire to spread from the ground into the treetops. Crown or canopy refers to the tops of trees or the limb cover of the vegetation. It is very important during a timber fire, as fire has the potential of using ladder fuels to gain access to the tops of the trees and become a moving crown fire. These fires can spread as fast as a grass fire from treetop to treetop.

Common fuel models within Lassen Modoc Unit

Fuel Model 1 Grass

Fire spread is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly thought the cured grass and associated material. Very little shrub or timber is present, generally less than one third of the area.

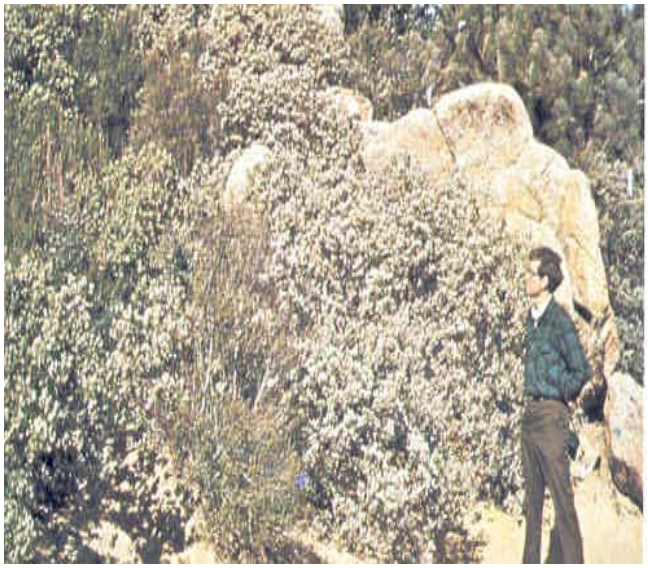
- Total fuel load, <3" dead and live, tons/acre = .74
- Dead fuel load, ¼", tons/acre=.74
- Live fuel load, foliage tons/acre = 0
- Fuel bed depth, feet = 1.0

Fuel Model 2 Grass and Pine

Fire spread is primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stem wood from the open shrub or timber overstory, pine stands may include clumps of fuels that generate higher intensities and that may produce firebrands.

- Total fuel load, greater than 3" dead and live, tons/acre = 4.0
- Dead fuel load, ¼", tons/acre = 2.0
- Live fuel load, foliage, tons/acre = 0.5
- Fuel bed depth, feet = 1.0

Fuel Model 4 Brush



Fire intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as California mixed chaparral. Besides flammable foliage, dead woody materials in the stands significantly contribute to the fire intensity. Height of stands qualifying for this model depends on local conditions. A deep litter layer may also hamper suppression efforts.

- Total fuel load, < 3" dead and live, tons/acre = 13.0
- Dead fuel load, ¼", tons/acre = 5.0
- Live fuel load, foliage, tons/acre = 5.0
- Fuel bed depth, feet = 6.0

Fuel Model 5 Brush

Litter cast by shrubs in the understory carries fire in this brush model. The fires do not burn intensely (4 foot flame lengths), nor rapidly since the young shrubs are green and the foliage does not burn. Usually shrubs are short and almost totally cover the area. Young green stands with no dead wood would qualify.

- Total fuel load, < 3" dead and live, tons/acre = 3.5
- Dead fuel load, ¼" tons/acre = 1.0
- Live fuel load, foliage, tons/acre = 2.0
- Fuel bed depth, feet = 2.0

Fuel Model 6 Brush

Unlike the fuel model 5, fires in this model will burn in the foliage of standing vegetation, but only when wind speeds are greater than 8 mph. Fires burn with an average flame length of 6 feet and spread at a rate of 2,112 feet feet/hour. Interior live oak, young chamise and Pinyon-juniper with sagebrush are all associated with this fuel model. In many instances a fuel model 5 will evolve into this model by the latter part of the summer.

- Total fuel load, <3" dead and live, tons/acre = 6.0
- Dead fuel load, ¼", tons/acre = 1.5
- Live fuel load, foliage, tons/acre = 0
- Fuel bed depth, feet = 2.5

Fuel Model 8 Timber

Slow burning ground fires with low flame lengths are generally the case, although the fire may encounter an occasional "jackpot" or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperature, low humidity, and high wind do the fuels pose fire hazards. Closed canopy stands of short – needle conifers or hardwoods that have leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand. Representative conifer types are white pines and lodgepole pine.

- Total fuel load, <3" dead and live, tons/acre = 5.0
- Dead fuel load, ¼", tons/acre = 1.5
- Live fuel load, foliage, tons/acre = 0
- Fuel bed depth, feet = 0.2

Fuel Model 9 Timber

Fires in this model also burn in needle or leaf fall under a conifer or hardwood canopy, but at a faster rate than in a fuel model 8 and more intensely. Concentrations of heavier dead material add to the possibility of the fire spreading to the crowns of trees. This model is found in a wide range of areas under timber stands which have been treated for fuel reduction, or have seen low intensity fires over the last decade. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowing.

- Total fuel load, < 3" dead and live tons/acre = 3.5
- Dead fuel load, ¼" tons/acre = 2.9
- Live fuel load, foliage, tons/acre = 0
- Fuel bed depth, feet = 0.2

Fuel Model 10 Timber

Fires burn in the surface and ground fuels with greater fire intensity than the other timber litter models. Dead-down fuels include greater quantities of 3-inch or larger limbwood resulting from over maturity or on the forest floor. Crowning out, spotting, and torching lead to potential fire control difficulties. Any forest type may be considered if heavy down material is present; examples are insect- or disease-ridden stands, wind thrown stands, over mature situations with deadfall, and aged light thinning or partial-cut slash.

- Total fuel load, < 3" dead and live tons/acre = 12.0
- Dead fuel load, ¼", tons/acre = 3.0
- Live fuel load, foliage, tons/acre = 2.0
- Fuel bed depth, feet = 1.0

National Wildfire Coordinating Group Fuel Models
Lassen - Modoc Unit Description

Fuel Model #	Fuel bed depth (feet)	Tons per Acre (live)	Tons per Acre (dead)	Flame Length (feet)	Spread Rate (feet/hour)	Comments
1	1	0	.74	4	5195	Dry grass. Not a common fuel found in the unit as found in the foothills and valleys of the Sacramento Valley
2	1	.5	4	6	2331	Dry grass with 1/3 to 2/3 brush or tree canopy. Very common throughout the unit.
3	2.5	2.5	3.01	12	6926	Grass model, not found locally.
4	6	5.01	16.03	19	4995	Thick brush with heavy dead component.
5	2	2	3.5	4	1199	Young or green brush with fire in the litter only.
6	2.5	2.5	6	6	2131	Mature or dry brush with foliage that will burn when exposed to wind.
7	2.5	2.5	4.87	5	1332	Brush model, not found locally.
8	.2	.2	5	1	107	Timber or hardwood with fire burning in light litter underneath.
9	.2	.2	3.48	2.6	499	Timber with fire in slightly heavier litter then model 8
10	1	1	12.02	4.8	526	Timber with heavy dead material underneath.
11	1	1	11.52	3.5	400	Light logging slash from a partial thinning operation
12	2.3	2.3	34.57	8	866	Moderate logging slash
13	3	3	58.1	10.5	899	Heavy logging slash

The local distribution of the fuel models is illustrated in the above map. Model 2 (grass) is found throughout the unit at various elevations; brush is found interspersed among the grass and then migrates into the timbered areas. The average elevation in the unit is approximately 5000 with higher mountain peaks. The entire unit is located on the northeastern plateau of California and the rainfall varies

thought. The Westwood and Bieber area, where predominately heavy timber is found, receives larger amounts of precipitation as compared to the balance of the unit. On the eastern portion of the unit the climate is more arid and the fuels consist primarily of sage and grass, interspersed with pine and juniper.

Determining and Defining Hazardous Fuels

The first step in defining hazardous fuels is the development of vegetation coverage for Lassen Modoc Unit in GIS. Vegetation coverages are described as planning belts which are areas consisting of similar vegetation types. These zones have similar fire behavior characteristics that impact fire suppression activities and are based on the Fire Behavior Prediction System (FBPS) fuel modeling. The Unit has four planning belt types: Grass, Brush, Conifer and Woodland.

The vegetation types within the planning belts are categorized into the FPBS fuel model coverage as shown in the National Wildfire Coordinating Group Fuel Model as described above. After vegetation coverages were identified, the past fire history for the unit was overlain on the vegetation coverage. Through analysis, surface fuel characteristics that result from past fires were factored into the creation of a final map, which displays a more accurate account of vegetation coverage, and thus, FPBS fuel characteristics.

The final phases of determining fuel hazard ratings for the Lassen -Modoc Unit involves the combining of crown fuel characteristics and surface fuel characteristics. The method describes additional ladder and crown fuel indices to surface fuels on a given area. If the vegetation data provides sufficient structural detail, the method imputes these additional indices from the data. If the vegetation data lacks structural detail, the method imputes indices based on the fuel model. The majority of indices are based on the FPBS fuel models.

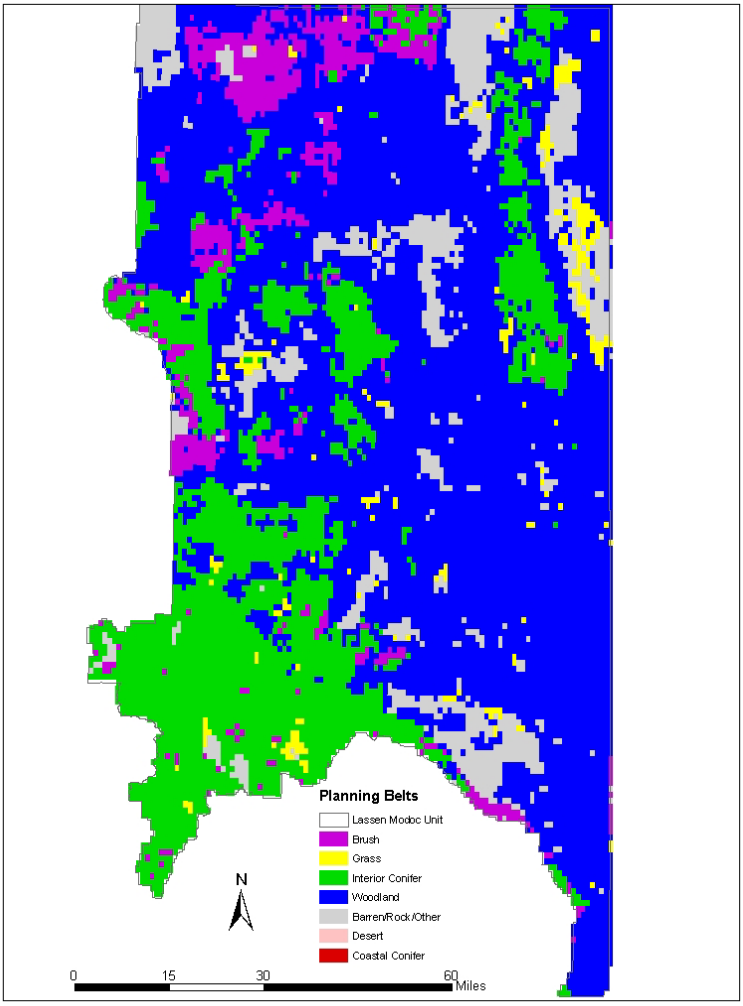
In areas where applicable, the ladder and crown fuel indices convey the relative abundance of the fuel types. The indices take values ranging from 0 to 2, with 0 indicating absent, 1 representing present but spatially limited, and 2 indicating widespread. These indices indicate the probability that torching and crown fires would occur if the stand were subjected to a wildfire under adverse environmental conditions.

The assessment method calculates fire behavior that can be expected for unique combinations of topography and fuels under given weather condition. BEHAVE (Andrews 1986) provides estimates of fire behavior under severe fire weather conditions for FPBS fuel models located on six slope classes. Each fuel model combined with each slope class receives a surface hazard rank.

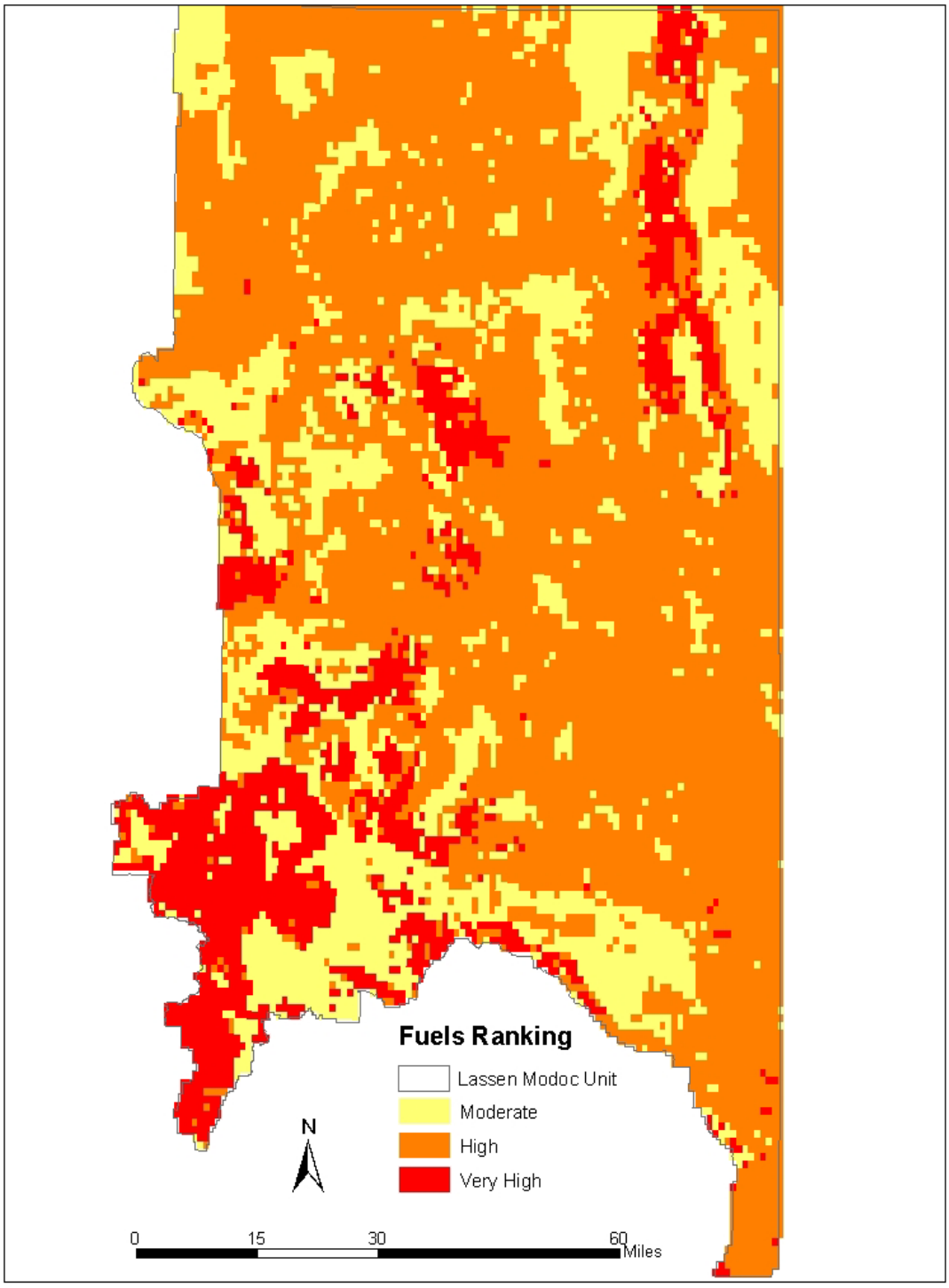
The total hazard rating includes not only hazards posed by surface fire, but also hazards by involvement of canopy fuels. The hazard ranking method includes this additional hazard component by adjusting the surface hazard rank according to the value of the ladder and crown fuel indices. Specifically, the surface hazard rank

increases a maximum of one class in all situations where the sum of the ladder and crown fuel indices is greater than or equal to two.

The potential fire behavior drives the hazard ranking. A rank is attributed to each Q81st in SRA within the unit. The ranking method portrays hazard ratings as moderate, high or very high. The final map displays the fuel hazard ranks within the Unit used as another factor for determining pre-fire management target areas, fire size potentials and information for stakeholders with interests in ecosystem management, fuels management, and pre-fire management.



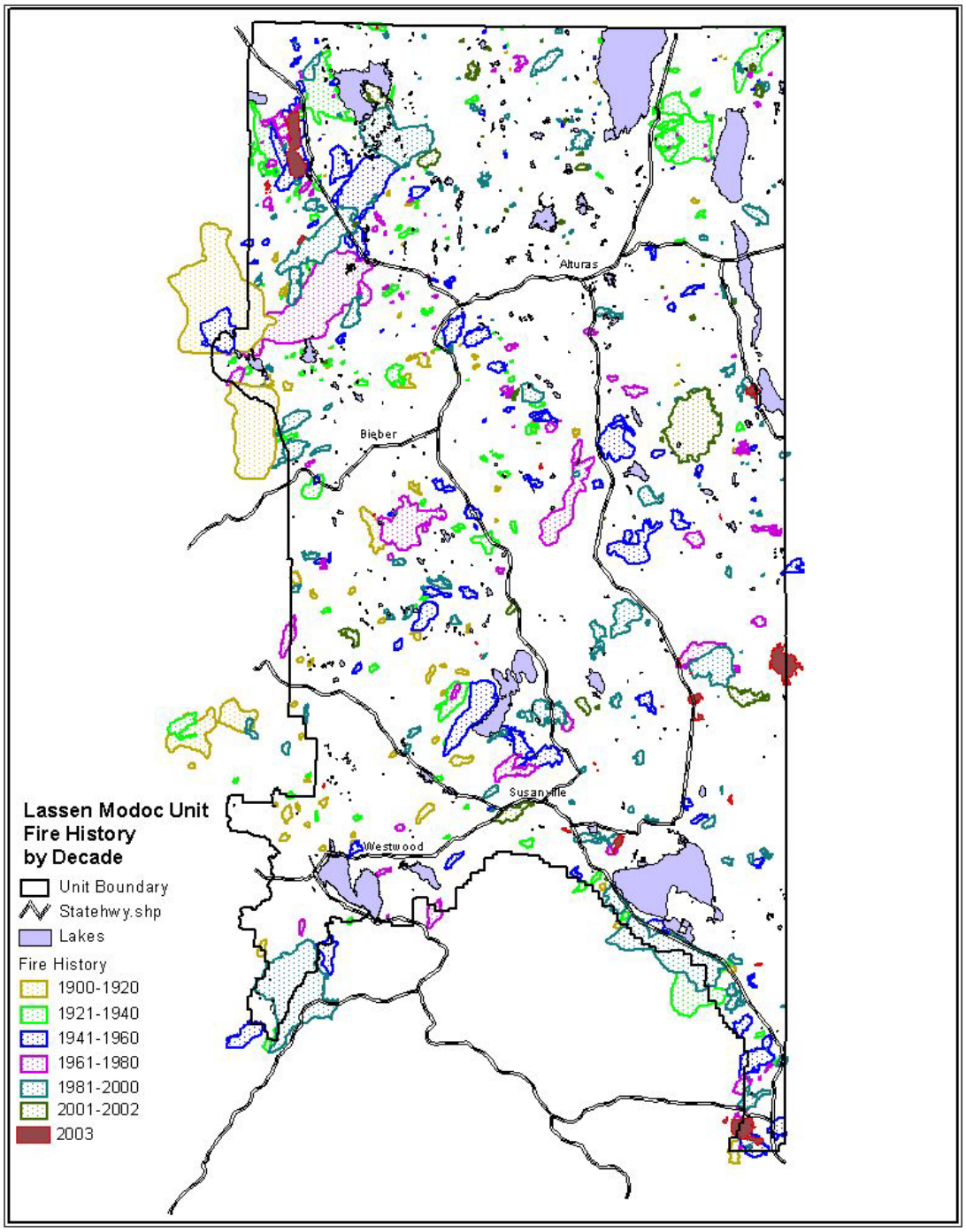
Knowledge of fire behavior in a given fuel type is essential for designing a defense plan against wildfire. Fires in brush often burn with an intensity that prevents fire crews from safely applying water to the flame front. Timber fires can ignite new fires (called spot fires) miles ahead of the main blaze, making control efforts nearly useless. Only wide scale pre-fire management programs can prevent a potential wildfire catastrophe.


Fuels Ranking
Lassen Modoc Unit
Moderate
High
Very High
N
0
15
30
60
Miles

Fire History

Wildfire history is a significant factor of the pre-fire management planning process. The fire plan assessment framework incorporates detailed information for determining the most beneficial locations for pre-fire management projects, an idea of the level of service in SRA for the unit, and various assets at risk information. Fire history is a piece of the puzzle that allows unit personnel to learn from our past and make an attempt to prepare for future fire behavior. Having knowledge of fire history provides an account of historic fire travel in a particular area. Armed with knowledge of historic fire spreads, fire suppression forces are better equipped to predict fire spread potentials. Identifying where the largest and most damaging fires have occurred is a necessary step in preparing for future wildfire. The most significant aspect of fire history in Lassen Modoc Unit is that personnel are able to compare the relationship between identified assets at risk and the historic burning patterns of wildfire which allows for more informed decision making processes when preparing fire planning documents and procedures.

Below is the wildfire history for Lassen Modoc Unit between 1900 and 2002. The second fire history map shows fire history just for 2003. The fires shown are 300 acres and larger. The maps display significant patterns that are used in pre-fire planning processes.


Alturas
Bieber
Susanville
Westwood
Lassen Modoc Unit
Fire History
by Decade
Unit Boundary
Statehwy.shp
Lakes
Fire History
1900-1920
1921-1940
1941-1960
1961-1980
1981-2000
2001-2002
2003

Description of Severe Weather Analysis

Severe fire weather is defined using the Fire Weather Index (FWI) developed by the USDA Forest Service Riverside Fire Lab. The FWI combines air temperature, relative humidity, and wind speed into a one number score. The FWI gives wildland fire managers an index that indicates relative changes in fire behavior due to the weather (fuel and topography conditions are not included in the calculation). Severe fire weather occurs when the FWI, calculated from the hourly weather measurement, exceeds a predetermined threshold.

The threshold FWI is derived from average bad fire weather of (approximately) 95° F, 20% relative humidity, and a 7 mph eye-level wind speed. Frequency of Severe Fire Weather is defined as the percent of time during the budgeted fire season that the weather station records severe fire weather. Individual weather stations are ranked as low, medium, or high frequency of severe fire weather. This ranking can then be applied to the area on the ground represented by the weather station.

Severe Weather Analysis Parameters

FWI CUTOFF	START LOW RANK	START MED RANK	START HIGH RANK
29.725	0%	5%	20%

Station	Owner	Lat	Long	Elev	Wx Score %	Wx Rank
Westwood	CDF	40.30	120.90	6200	2.46	L
Grasshopper	CDF	40.78	120.76	6050	0.85	L
Devils Garden	CDF	41.50	120.68	5022	8.44	M
Round Mountain	BLM	41.42	121.45	5258	4.29	L
Juniper Creek	BLM	41.33	120.47	4372	10.97	M
Barrel Springs	BLM	41.91	119.92	5710	9.94	M
Blue Door	BLM	41.05	120.33	5615	1.55	L
Horse Lake	BLM	40.63	120.5	5100	9.35	M
Bull Flat	BLM	40.48	120.11	4395	10.14	M
Doyle	BLM	40.02	120.11	4240	5.16	M
Bogard	USFS	40.48	120.11	5680	0.76	L
Gordon	USFS	40.45	120.53	6200	0.07	L
Chester	USFS	40.28	121.23	4525	3.16	L
Colby	USFS	41.43	120.86	4312	24.7	H

WxSCORE

[Severe Wx]/[Wx In Season]. The percent of time a weather station is experiencing severe weather. Non-fire season data is thrown out at this point. The assumption is that during winter the fuels aren't ready to burn regardless of the weather. There are exceptions to this, but trying to count every possible contingency would weaken the result we are trying to achieve.

WxRANK

The Wx SCORE intensity rating is lumped into three categories to create a severe fire weather frequency ranking.

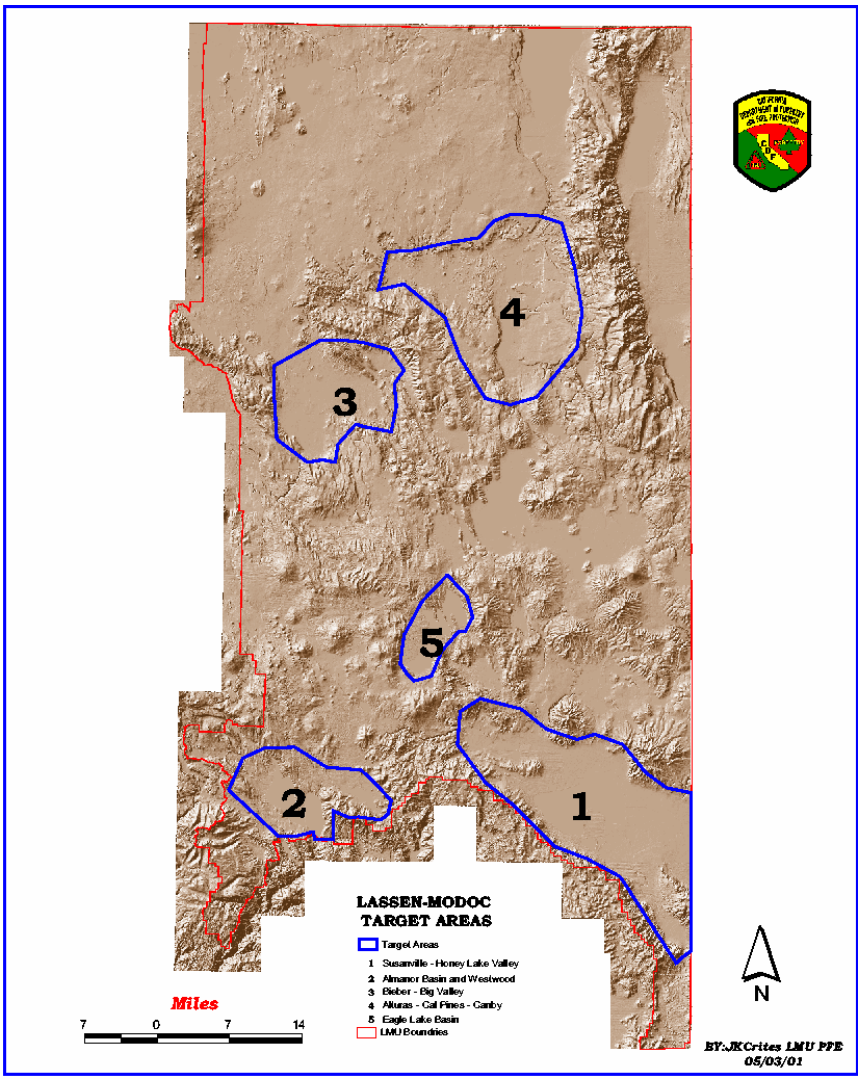
Priority Areas

General Description of the Target Areas

Within the Lassen Modoc Unit, the greatest potential for loss and initial Attack failures are located near the populated areas. These areas are located in and around the following communities:

Susanville – Honey Lake Valley
Almanor Basin and Westwood
Bieber – Big Valley
Alturas - Cal Pines
Eagle Lake Basin

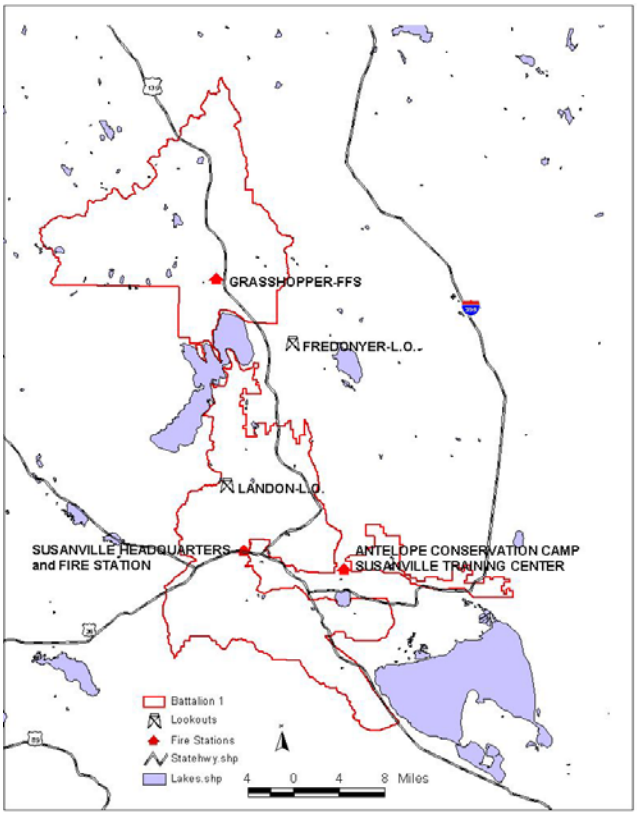
These areas have been identified by Battalion Chiefs as the most logical areas to begin fuel mitigation projects and the education of the public to the potential fire problems, and general implementation of fire safe practices.



BATTALION 1

Description

Battalion 1 (Susanville Battalion) is located in the central and southeastern portion of Lassen County, with the communities of Susanville, Johnstonville, Janesville, Standish, Litchfield, Lake Forest Estates, Stones Landing and Spaulding. The City of Susanville is an incorporated City which is in the center of the Battalion.



U. S. Highway 395 travels through the Battalion on its east side. State Highways 44, 139 and 36 also travel through the Battalion and intersect with U.S. 395. The elevation of the Battalion is approximately 4500' in the Honey Lake Valley to 7700' on Diamond Mountain, with an average elevation of approximately 5800' on the northeastern plateau of California.

Approximately 32,000 acres of this Battalion are State Responsibility Lands; the only Local Responsibility Land is located within the Honey Lake Valley area, in Susanville City, and portions of the communities of Standish, Janesville and Johnstonville. The highest housing and population concentration in the Unit is located in Battalion 1.

Fuels

The vegetative cover in Battalion 1 is comprised of standing timber on the west and northwest sides of the Battalion and high desert sage, bitterbrush and juniper on the mid and east side of the Battalion. Most of the large fires in Lassen Modoc Unit over the years have occurred in Battalion 1 in the timbered areas.

Fire Weather

Fire weather in Battalion 1 can be extreme because of its location and elevation. Most of the 32,000 acres are in a very dry climate due to being in the rain shadow of the Sierra Nevada/Cascade Range. The rainfall for 2003, Susanville Station had 13.10 inches of rain for a season average of only 79.2%; Grasshopper Station had 14.10 inches for a season average of only 95.9%. Single digit relative humidity during the summer months is not uncommon and many of the forest fuels remain ready to burn in the late spring – early summer, prior to the finer fuels drying out.

Assets at Risk

Most of the population within Lassen County is found in Battalion1. Of these homes, most are located in the wildland urban interface which provides for an interesting firefighting challenge. Many of these homes are in a bitterbrush/sage and juniper vegetation belt. However in Janesville there is a large concentration of homes found in the timber.

Timber lands make up a large portion of Battalion 1. This asset is found along the entire west side of the Battalion along its west side. Much of the timbered land is owned by Sierra Pacific Industries and W.M. Beatty and Associates. Most of this land also borders the Plumas and Lassen National Forest on the south and west and the Modoc National Forest in the north.

The Grasshopper Valley at the north end of the Battalion is not only a large portion of the grazing and rangeland, but also hosts large herds of antelope. During the summer months, one can find many antelope grazing along with the cattle here. Most of the timbered lands are also leased as grazing range.

Eagle Lake is found just south of Grasshopper fire station, and is a popular fishing and boating resource. . The wildland of the Battalion provides an excellent recreation asset. Many people travel from all over the state to spend their summer vacation here. All throughout the woods of the Battalion one can find people hiking, fishing, and snowmobiling during the winter

The watershed is also an important asset. Although most of the mountains and the high plains are flat, what water that is collected from the snow and rainfall during the winter, finds its way into the rivers and lakes and is utilized to produce hydro-electric power. That same water continues down into the Sacramento River or Carson (in Nevada) drainage where it becomes part of the domestic supply.

Battalion 1 Resources

Susanville Station	Grasshopper Station
2- Fire Engines	2 – Fire Engines
1- Bull Dozer	

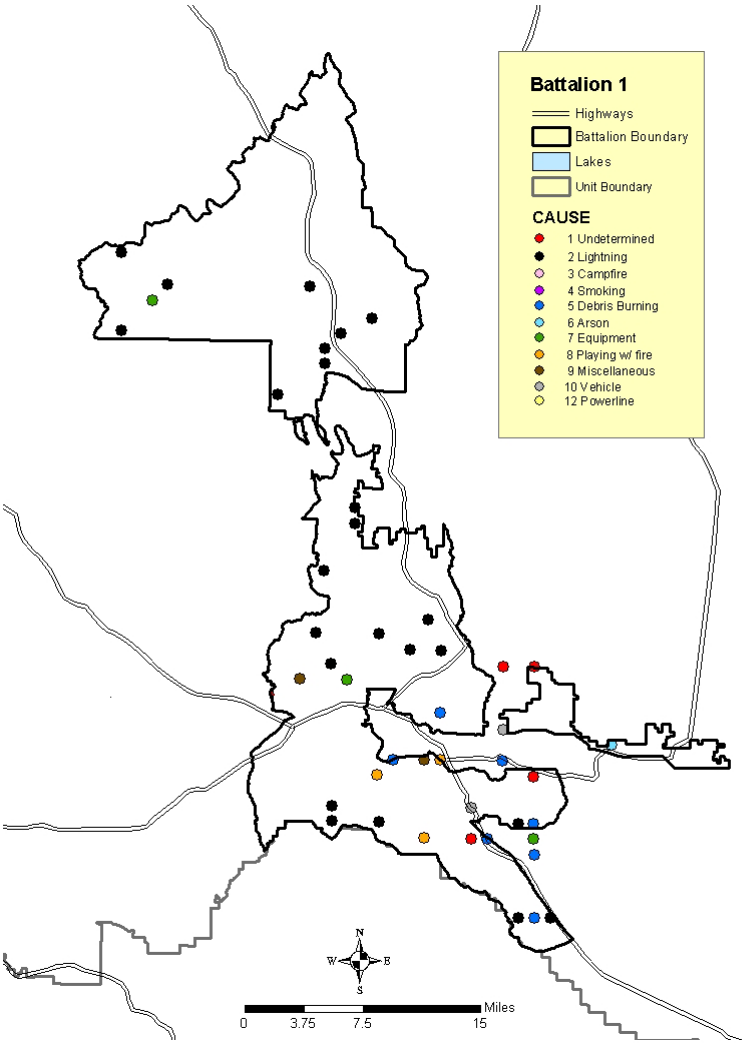
1- Reserve Engine
Landon Lookout Fredonyer Lookout

Fire Protection Districts and Volunteer Departments include:
California Correctional Center
Susanville City Fire Department
Susan River Fire Protection District
Janesville Fire Protection District
Standish-Litchfield Fire Protection District
Doyle Fire Protection District
Eagle Lake Fire Protection District
Stones-Bengard Fire Protection District
Lake Forest Fire Protection District
Milford Fire Protection District
Sierra Army Depot Fire Department
Ravendale Volunteer Fire Department

Ignitions

There were 45 known ignitions in Battalion 1 in 2003. The largest cause of these fires was lightning for a total of 27 fires. The following is a break down of the ignitions within the Battalion:

Undetermined 3
Lightning 27
Debris 5
Arson 1
Equipment use 1
Playing with fire 3
Miscellaneous 9
Vehicle 10



Fire Safe Council and Stakeholders

Within Battalion 1 there are two active Fire Safe Councils: The

Janesville Fire Safe Council and the Lassen County Fire Safe Council. Both of these councils are working on fuels reduction projects and education and outreach to the community. See the Fire Safe Council page of the Fire Management Plan for greater detail on both of these councils.

Projects

Battalion 1 has an active LE 38 inspection program in the communities. The goal is to gain *PRC 4291* compliance. During the summer months, the engines from both Susanville and Grasshopper are involved in the program as well as working with the schools and community groups in fire prevention programs.

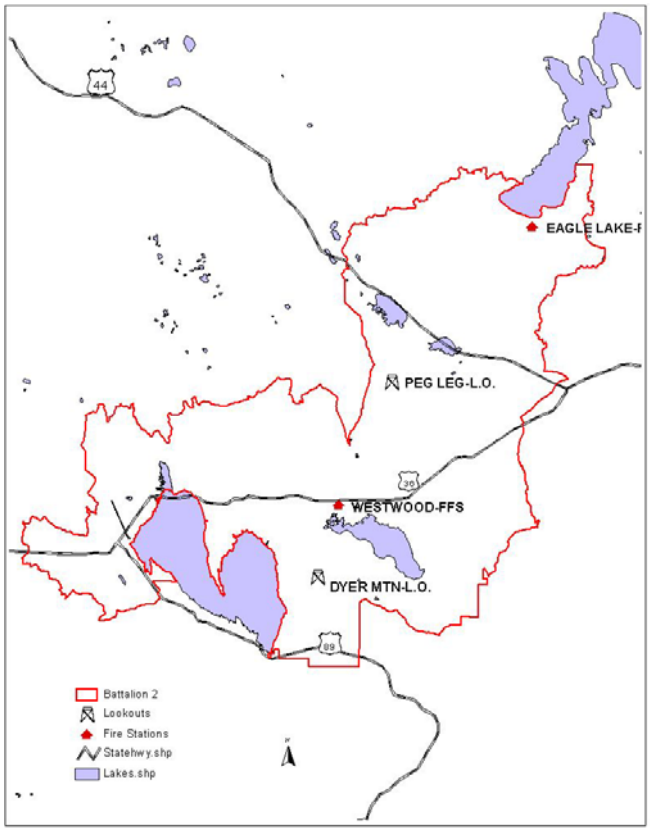
Burning permits are issued to the public beginning on May 1 of every year and are valid until the 30th of June when all burning is suspended in the unit. LE 5's are issued in conjunction with the local fire protection districts for agricultural burning.

CDF in conjunction with the Fire Safe Councils are currently working on several ongoing fuels reduction projects. (see the description on Fire Safe Council)

BATTALION 2

Description

Battalion 2 (Westwood Battalion) is located on the west side of Lassen County and includes the Almanor Basin, in Plumas County. The communities of Westwood, Pinetown, Clear Creek, Hamilton Branch, Canyon Dam, Prattville, Almanor West and Chester are all within this Battalion. State Highways 36, 147, 89 and 44 traverse through Battalion 2.



In Battalion 2 approximately 13,000 acres are State Responsibility Lands; Local Responsibility Land is located in the town of Chester and the community of Westwood. The population is concentrated in Westwood and all around the Lake Almanor Basin. Approximately 3600 people make the communities of Battalion 2 their home.

Fuels

The vegetative cover in Battalion 2 is predominately standing timber, with grass and sage cover.

Fire Weather

Fire weather in Battalion 2 is wetter than that of Battalions 1 and 4, which are both located on the eastern slopes of the Sierra/Cascade mountain range. During the winter of 2003/2004, Westwood received 26.04 inches of rain for 104.1% of normal.

Assets at Risk

Many of the homes in Battalion 2 are located in the standing timber (also called the wildland urban interface) and provides an interesting firefighting challenge due to the heavy fuels.

The timber lands in the Battalion are owned by Collins Pine, Roseburg Lumber, Sierra Pacific Industries, and W. M. Beatty and Associates. The Plumas National Forest borders the Battalion on the southeast, and the Lassen National Forest touches the battalion at points on the North, West and East.

Much of the National Forest land is leased out during the summer and fall for cattle grazing.

Eagle Lake is also in this Battalion, which is a popular location for fishing and boating. The Battalion has many recreational attractions such as hiking, fishing, and snowmobiling during the winter.

The development of the Dyer Mtn, a four season resort is underway. When completed the resort area will attract large numbers of people and will include both permanent and seasonal occupants.

The watershed in Battalion 2 is also an important asset. The water from this watershed supplies the Sacramento and Carson Rivers and is then used as the domestic water supply in several communities.

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Battalion 2 Resources

Westwood Station	Eagle Lake Station
2- Fire Engines	1 – Fire Engine
Peg Leg Lookout	
Dyer Mtn. Lookout	

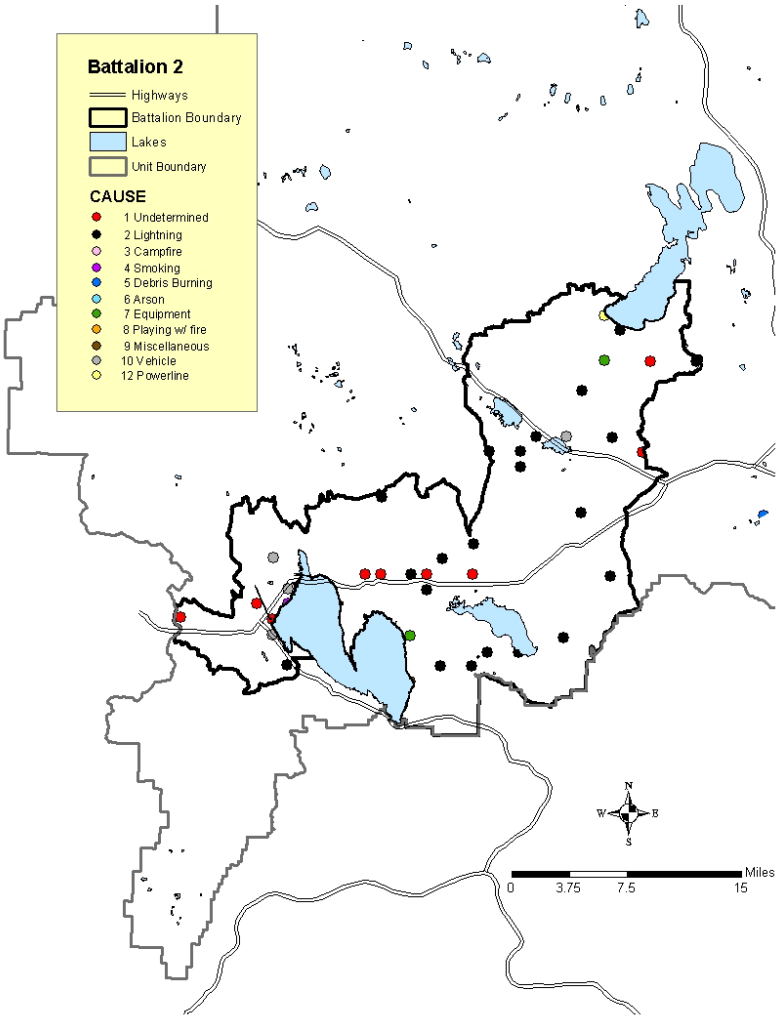
Fire Protection Districts and Volunteer Departments include:

Westwood Community Services District and Volunteer Fire Department
Chester Fire Department
Almanor West Fire Department
Hamilton Branch Fire Department
Clear Creek Volunteer Fire Department
Prattville Fire Protection District
Peninsula Fire Protection District

Ignitions

In 2003, Battalion 2 had a total of 41 ignitions which resulted in fires. The leading cause of these fires was lightning for a total of 20 fires. The following is a break down of the ignitions within the Battalion:

Undetermined 10
Lightning 20
Smoking 1
Debris 1
Equipment 2
Miscellaneous 1
Vehicle 5
Powerline 1



Fire Safe Council and Stakeholders

The Almanor Basin Fire Safe Council represents communities surrounding Lake Almanor and Clear Creek and Westwood. The Lassen Fire Safe Council, Inc. and the Almanor Basin Fire Safe Council work together on identifying and developing "fire safe" projects. In the winter of 2003, the Lassen County Fire Safe Council sponsored the Almanor Basin Community Chipping grant through the National Fire Plan grant application process. This was done because of the requirement for a non-profit/tax identification number, which the Almanor Basin FSC has not acquired yet and Lassen County FSC, Inc. has. This cooperative spirit is one of the many strengths these councils have.

Projects

Battalion 2 has an active LE 38 inspection program in the communities. The goal is to gain *PRC 4291* compliance in all of the communities within the Basin.

Eagle Lake station will continue to patrol and provide fire prevention programs during the summer at the campgrounds around the south end of Eagle Lake.

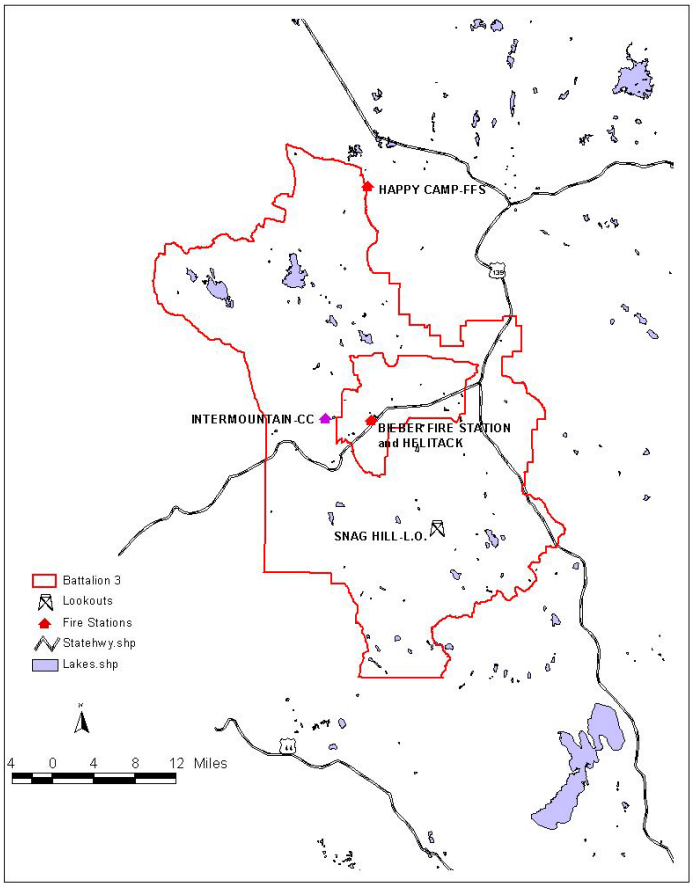
There is a need for the development of a shaded fuels reduction program on and around the proposed Dyer Mountain Recreation project. Continue and complete the Shaded Fuel Break around the Almanor Basin and develop a proposed Community Fuels Reduction and Shaded Fuel Break around Westwood and Clear Creek.

Work with the Lassen National Forest on an inspection and fuels reduction project in the Warner Valley area. Work closely with the timber companies within the Battalion to establish strategically placed fuel breaks for inclusion within their timber harvest plans. All fuels reduction projects are currently being worked on in conjunction with the Fire Safe Councils.

BATTALION 3

Description

Battalion 3 (Bieber Battalion) is located in the northwest portion of Lassen County, southwest corner of Modoc County and borders to the west along Shasta – Trinity and Siskiyou Units. The communities of Bieber, Nubieber, Day, Lookout and Adin are located within its boundaries.



State Highway 299 and 139 traverse the Battalion. Approximately 17,260 acres of this Battalion are State Responsibility Lands; Local Responsibility Land is located in the Big Valley area around the towns of Bieber, Nubieber and in the Pittville. The population within the Battalion is found in Bieber, Nubieber, Lookout, Day, Little Valley and Adin. Approximately 1400 people make the communities of Battalion 3 their home.

Fuels

The vegetative cover in the Battalion 3 is predominately standing timber with grass/sage cover. The Big Valley area of the Battalion is agricultural with much of the land committed to the production of hay. Many fires in this Battalion grow quite quickly, due to its remoteness of and the lack of roads.

Fire Weather

Fire weather in Battalion 3 is wetter than that of Battalions 1 and 4, which are located in the rain shadow of the Sierra/Cascade Mountains. The precipitation total for 2003 was 16.66 inches, which was 113.3% of normal.

Assets at Risk

Many of the homes in Battalion 3 are located in the wildland urban interface area. The Lookout ranchettes and the homes along Day Road are prime examples. These homes are within standing timber with an understory of grass/sage forest fuels.

The timber lands in the Battalion are owned by Sierra Pacific Industries and W. M. Beatty and Associates. The Modoc National Forest and the Lassen National Forest have common borders with the Battalion. Much of the National Forest land is leased out during the summer and fall for grazing of cattle.

The Lava Beds National Monument and Lassen Volcanic National Park are close by and many people travel through this area en-route to these locations. The entire area is well known for its hunting and fishing.

This is an important watershed area. The water that is collected from the snow and rainfall during the winter, finds its way into the rivers and lakes, which provide hydro-electric plants along the Pitt River and is a source for domestic water for several communities along the Sacramento River.

Battalion 3 Resources

Bieber Station	Happy Camp Station
2- Fire Engines	1 – Fire Engine
1- Helicopter and crew	
Snag Hill Lookout	

Intermountain Conservation Camp is located just outside of Nubieber and has 4 Fire Crews available.

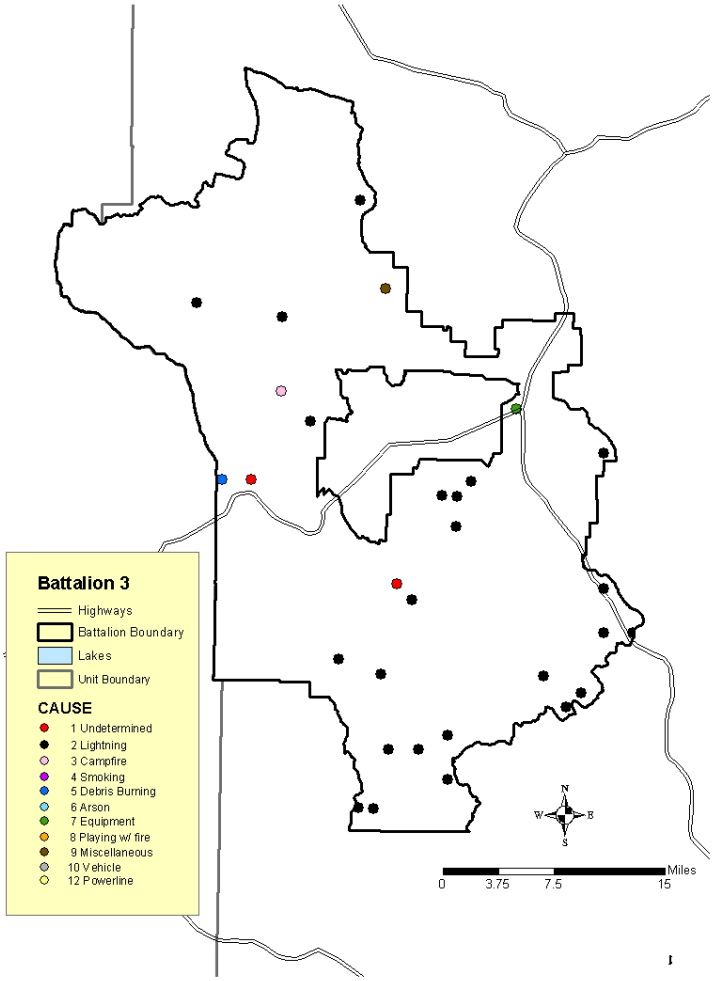
Fire Protection Districts and Volunteer Departments include:

Big Valley Fire Protection District
Lookout Volunteer Fire Department
Adin Volunteer Fire Department
McArthur Volunteer Fire Department (Day Bench)
Little Valley Community Services District
Northwest Lassen County Fire Protection District
Newall Fire Protection District

Ignitions

During 2003, Battalion 3 had a total of 33 ignitions which resulted in fires. The leading cause of these fires was lightning for a total of 26 fires. The following is a break down of the ignitions within the Battalion:

Undetermined 3
Lightning 26
Campfire 1
Debris Burning 1
Equipment 1
Miscellaneous 1



Fire Safe Council and Stakeholders

There are three Fire Safe Councils in the operating area of Battalion 3: the Modoc County Fire Safe Council, the Lassen County Fire Safe Council, and the Lassen Day Bench Fire Safe Council. CDF personnel attend these council meetings and are active in assisting in the decision processes. Projects are being developed to create "fire safe" communities within this Battalion.

Projects

Battalion 3 has an active and on going LE 38 and *PRC 4291* inspection program

Hwy 299/McArthur Fuels Reduction Project. This project involves removing and thinning forest fuels along the highway right of way from the east side of Widow Mountain over the summit and on toward the town of McArthur. Intermountain Conservation Camp crews have been working on this project over the past 4 years, and will continue as needed. This project involves removing brush, limbing and removing trees as needed to reduce the potential fire hazard.

Modoc County Road 91 Shaded Fuel Break. This project runs along the Hackamore Road, County Road 91, which is to maintain and widen existing 100 foot wide shaded fuelbreak that helped control the 1987 Crank Fire. This paved road is a major north south route through the Modoc Plateau. This project is approximately 10 miles in length and was a 2001 to 2002 VMP project.

Lookout Fuels Reduction Project. This is a proposal to treat approximately 30 acres of vacant lots between the Burlington Northern Santa Fe Railroad tracks and the community of Lookout. This area has a large number of downed trees and dead or dying material which and poses an extreme fire hazard. This project will mirror the fuels reduction project which was performed in the Janesville community in southern Lassen County. This project will proceed as future grants allow.

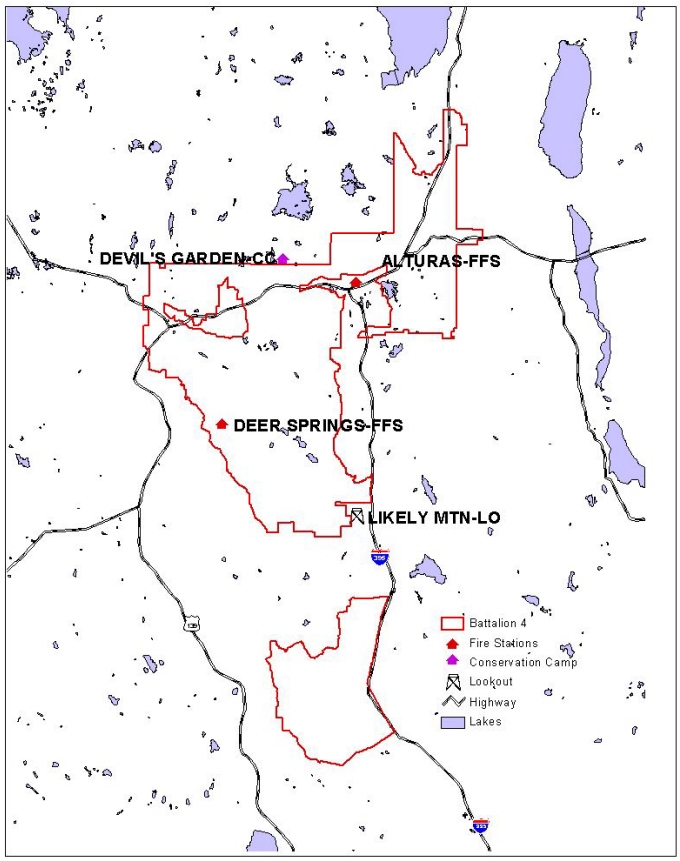
Service Gulch Road Shaded Fuel Break. This 5 mile shaded fuelbreak project is currently 90% complete and the work was done by the Sierra Pacific Industries.

Day Road Fuels Reduction Demonstration Project. The Day Road Fire Safe Council performed a 5 acre fuel reduction demonstration project at the intersection of Day Road and Hwy 299. This project occurred in the summer of 2002 and was completed via a dozer with a brush rake. The fuels included buck brush and juniper which were piled and then burned using inmate labor from Intermountain Camp in March of 2003. There are three other demonstration proposals for the Day Road area. A nine acre site near Old Toll Road and Iris Lane is slated for a combination of mastication and chipping fuel reduction. The two other demonstration sites are near Day Pit Road and Badger Lane (both intersect Day Road) with mastication projects of 2 acres each. Work is scheduled to be completed by July 2003.

Battalion 4

Description

Battalion 4(Alturas Battalion) is located in the northeastern portion of the Lassen – Modoc Unit. It is located on the east half of Modoc County with Oregon to the north and Nevada to the east. The most southern end of the Battalion is within the northeastern part of Lassen County. The communities of Alturas, Canby, Likely, and Madeline are located within its boundaries.



U. S. Highways 395, 299 and 139 travel through the Battalion. Approximately 21,500 acres of this Battalion are State Responsibility Lands; Local Responsibility Land surrounds the community of Alturas and runs south to Likely. Approximately 1800 people live within the boundaries of Battalion 4.

Fuels

The vegetative cover in the Battalion is predominately standing timber in the mountains, with juniper grass/sage cover in the eastern half of the battalion where the terrain is at a lower elevation. Many fires in this Battalion grow quite quickly due to the remoteness of the area and lack of roads.

Fire Weather

Fire weather in Battalion 4 is drier, being in the rain shadow, than that of Battalion 2 and 3, which are located to the west and near the top of the Sierra/Cascade mountain range. During 2003, Alturas received 10.35 inches of rain, which is 83.3% of the norm.

Assets at Risk

Many of the homes in Battalion 4 are located in the wildland urban interface area in Cal Pines south of Alturas and in the Modoc Estates, just north of town. These homes are within standing timber and/or juniper with an under story of grass/sage forest fuels.

The Modoc National Forest and the Warner Wilderness Area have common borders with the Battalion. In the southeast portion of the Battalion much of the land is managed by the Bureau of Land Management. Much of the National Forest and BLM land is leased out during the summer and fall for grazing of cattle.

The Warner Wilderness Area is a popular area for hikers and explorers and holds a wealth of natural resources for the area. The entire area is well known for its hunting and fishing.

This is an important watershed area. The water that is collected from the snow and rainfall during the winter finds its way into the rivers and lakes, which provide hydro-electric plants along the Pitt River and is a source for domestic water for several communities along the Sacramento River.

Battalion 4 Resources

Alturas Station	Deer Springs Station
2- Fire Engines	1 – Fire Engine
Likely Mtn. Lookout	
Bulldozer and service unit	

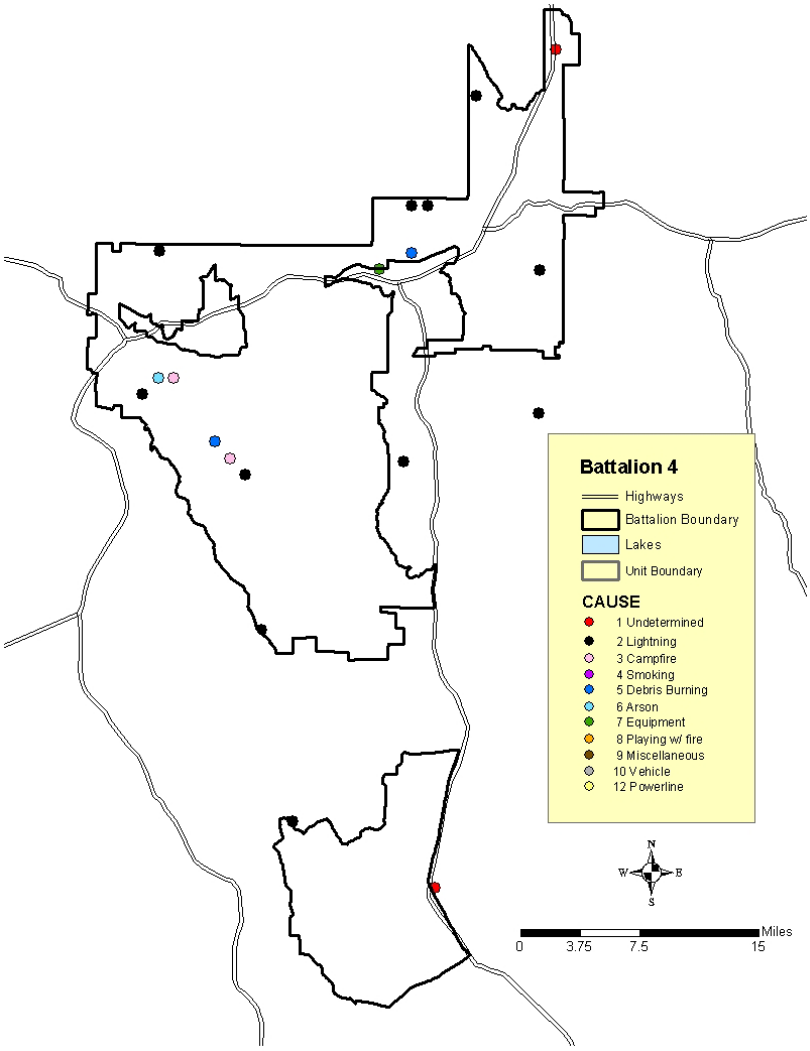
Devils Garden Conservation Camp is located to the west of Alturas just outside of town and has 5 Fire Crews available.

Fire Protection Districts and Volunteer Departments include:
Alturas City Fire Department
Alturas Rural Fire Protection District
Cal Pines Community Service District
Canby Fire Protection District
Cedarville Fire Protection District
Davis Creek Fire Protection District
Eagleville Fire Protection District
Fort Bidwell Fire Protection District
Lake City Fire Protection District
Likely Fire Protection District
Madeline Fire Protection District

Ignitions

In 2003, Battalion 4 had a total of 21 ignitions which resulted in a fire. The leading cause of these fires was lightning for a total of 11 fires. The following is a break down of the ignitions within the Battalion:

Undetermined 8
Lightning 11
Campfire 2
Debris burning 2
Arson 3
Equipment Use 1



Fire Safe Council and Stakeholders

The Modoc County Fire Safe Council and Lassen County Fire Safe Council are supported by the Battalion personnel. The Modoc County FSC is working on developing a fire plan for the communities within Modoc County. Modoc County FSC is in the process of obtaining a part-time person to administer their grants and programs

Projects

Battalion 4 has an active LE 38 inspection program in the communities. The goal is to gain *PRC 4291* compliance in all of the communities. Along with the LE-38 inspections, Battalion 4 staff are GPSing the driveways and access roads into the residences.

Cal Pines Fuelbreak: This shaded fuelbreak was proposed in 1999. The project is located on the west side of the California Pines Hill Units Subdivision. This subdivision consists of approximately 11,000 - 1 acre lots with 9,000 absentee landowners and currently only 82 structures have been built.

The vegetation types include Mixed Conifer, Eastside Pine and an understory of brush and grass. The area suffered a severe die-back of white fir which was followed by heavy logging generating a build-up of slash. There have been challenges in implementing this project through ownership changes and spotted owl concerns. The objective is to break up the heavy fuel loading into blocks to reduce the need for sustained fire suppression efforts in the future.

This project is a priority in the Unit. $30,000 in RAC dollars has been obtained for the project. The plan is to utilize inmate labor from Devils Garden Camp. This project is expected to get underway in the Summer of 2004.

Summerland Estates Fuelbreak: This project is located northeast of Alturas near Cedar Pass. The 1 square mile community sits at 5,800 feet at the transition between brush and white fir. The white fir in the area suffered severe die-back and heavy fuels have accumulated adjacent to the community. The community straddles 3 spur ridges with 2 associated draws that would act as chimneys in typical wildfire behavior. This project is in the conceptual stage.

Thomas Creek Estates Fuelbreak: This project is located northeast of Alturas and is adjacent to the Modoc National Forest. The vegetation includes sagebrush and grassland, juniper/sagebrush and Eastside pine. Resident safety, access and rapid initial attack is the concern of the Unit. The project is in the conceptual stage.

Vegetation Management Program in Fire Management

Attainment of the fuels reduction goals of the Lassen – Modoc Unit Fire Plan will require on-the-ground effort. The use of CDF and CCC crews, and equipment will likely be necessary in many areas where stakeholders do not have the finances or resources to do an effective job individually or as a group. The Vegetation Management program (VMP) is currently the primary vehicle by which CDF resources may be used on privately owned lands. In place since 1981, the program has been an effective fuels reduction / rangeland improvement tool. Because of increasing competition for smoke allotments, CDF's use of fire to reduce fuel load is in jeopardy and because of this, chipping will likely become the primary disposal method in the future.

VMP is a cost-share program; the State's share of a project's cost may range from zero to ninety percent. This is based on a public benefits formula --the greater the benefit to the public, the greater the share of the cost of the project CDF may assume. Fuels reduction projects in critical areas within the Unit as identified in this plan have a high public to private benefits ratio therefore the unit's efforts should be concentrated in these areas. For example, the project in the Janesville area that will reduce fuels around the community has a high public/private benefit and a lower landowner participation is then justified. Conversely, projects that are essentially range improvement burns that are not near population concentrations will require a higher degree of landowner effort and proportional costs.

This is not to say that rangeland burning is of minor importance. Through this century, range improvement burns have been vital in managing wildland fuels on a landscape basis. However, increasing population in the rural areas has brought constraints such as smoke management and liability concerns. Such constraints have made the LE-7, range improvement project less attractive and has put VMP projects in higher demand with managers from the timber industry and ranchers.

The unit currently has a variety of VMP projects in various stages of preparation. These projects vary from those with range and wildlife habitat improvement as the primary goals (South Knobb and Honey Lake Ranch) to the Almanor Basin and Janesville Shaded Fuel Break projects, which have community fire protection as a goal. The Lassen - Modoc Unit will make a concerted effort to pursue projects that meet the wide array of demands placed on the Vegetation Management Program within the Unit.

Susanville Battalion

South Knob Ranch VMP,
This project is located north of Grasshopper FFS in a juniper – sagebrush vegetation type. The objective of this project is to greatly reduce extreme fire hazard fuels and return the area to productive grasslands. This project is a cooperative between a private rancher and the BLM. The rancher will seek additional assistance through

various Stewardship grants as well as Title II funds from the Lassen County RAC.
975 acres.

Honey Lake Ranch
990 acres. Wildlife habitat
N-045

Westwood Battalion
Almanor Basin
Sierra Pacific Industries and Almanor Basin Fire Safe Council. Shaded Fuel Break
270 acres.
N-047 LMU

Bieber Battalion

Tuft #4 (Scarface Project)
Sierra Pacific Industries
540 acres
2-032 LMU

Knobby (Scarface Project)
Sierra Pacific Industries
3000 acres
2-033 LMU

Webb Circle (Scarface Project)
Sierra Pacific Industries
1320 acres
N-042 LMU

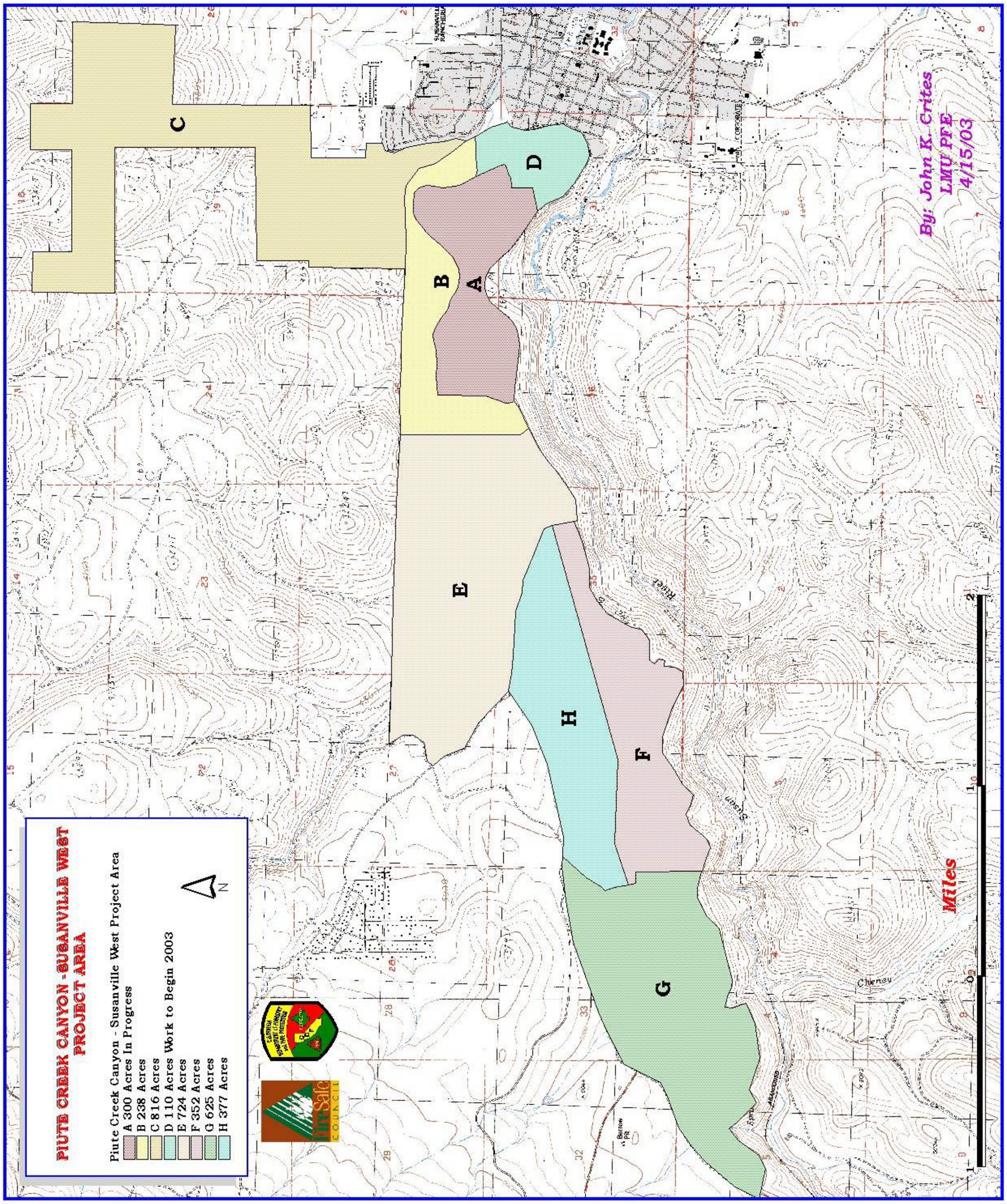
Ash Creek
Wildlife habitat
1590 acres
N-048 LMU
Ash Creek

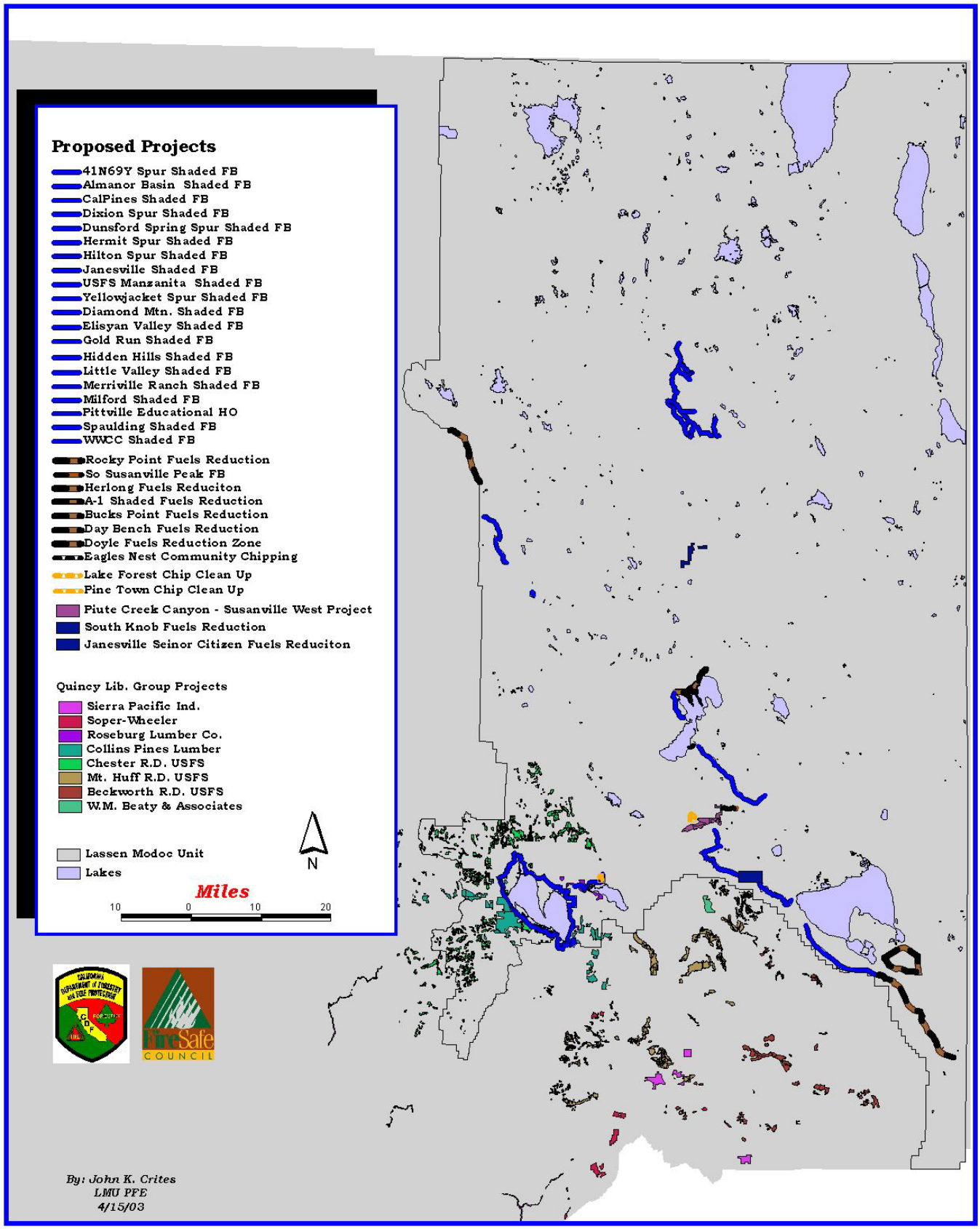
Wildlife habitat
1590 acres
N-050

The Scarface Projects: to treat 25,000 acres in SRA. The objective is fire hazard reduction followed by reforestation efforts by the landowner. This Eastside Pine vegetation type was burned in 1977 with a total of 82,000 acres consumed, 43,000 acres of which were private timberlands originally managed by W. M. Beaty & Associates, now currently managed by Sierra Pacific Industries (SPI).

17,309 acres of brush and heavy fire debris have been treated under 14 VMP projects of which 3 are still active. All previous projects have been reforested to pine with approximately 1,000 acres allowed to re-sprout for wildlife habitat.

Appendix A


PIUTE CREEK CANYON - SUSANVILLE WEST PROJECT AREA
Piute Creek Canyon - Susanville West Project Area
A 300 Acres In Progress
B 238 Acres
C 816 Acres
D 110 Acres Work to Begin 2003
E 724 Acres
F 352 Acres
G 625 Acres
H 377 Acres
A
B
C
D
E
F
G
H
By: John K. Crites
LMU PFE
4/15/03
Miles


Proposed Projects
41N69Y Spur Shaded FB
Almanor Basin Shaded FB
CalPines Shaded FB
Dixion Spur Shaded FB
Dunsford Spring Spur Shaded FB
Hermit Spur Shaded FB
Hilton Spur Shaded FB
Janesville Shaded FB
USFS Manzanita Shaded FB
Yellowjacket Spur Shaded FB
Diamond Mtn. Shaded FB
Elisyan Valley Shaded FB
Gold Run Shaded FB
Hidden Hills Shaded FB
Little Valley Shaded FB
Merriville Ranch Shaded FB
Milford Shaded FB
Pittville Educational HO
Spaulding Shaded FB
WWCC Shaded FB
Rocky Point Fuels Reduction
So Susanville Peak FB
Herlong Fuels Reduciton
A-1 Shaded Fuels Reduction
Bucks Point Fuels Reduction
Day Bench Fuels Reduction
Doyle Fuels Reduction Zone
Eagles Nest Community Chipping
Lake Forest Chip Clean Up
Pine Town Chip Clean Up
Piute Creek Canyon - Susanville West Project
South Knob Fuels Reduction
Janesville Seinor Citizen Fuels Reduciton
Quincy Lib. Group Projects
Sierra Pacific Ind.
Soper-Wheeler
Roseburg Lumber Co.
Collins Pines Lumber
Chester R.D. USFS
Mt. Huff R.D. USFS
Beckworth R.D. USFS
W.M. Beaty & Associates
Lassen Modoc Unit
Lakes
N
Miles
10 0 10 20
FireSafe COUNCIL
By: John K. Crites
LMU PFE
4/15/03